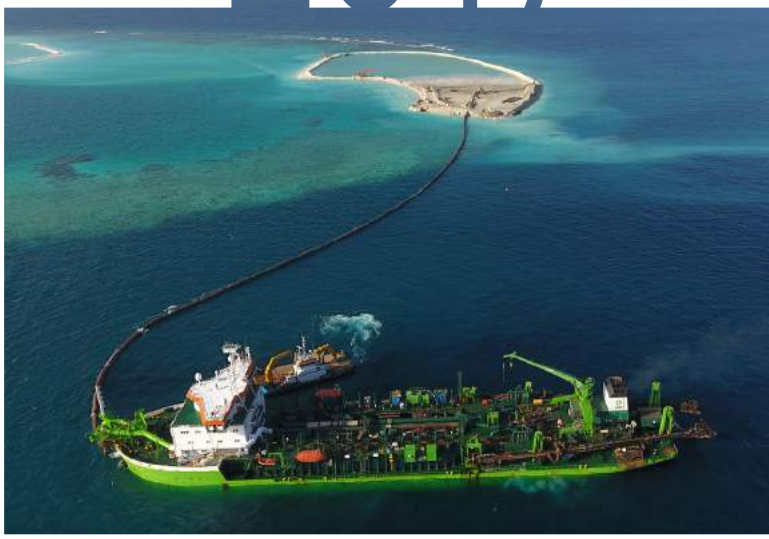
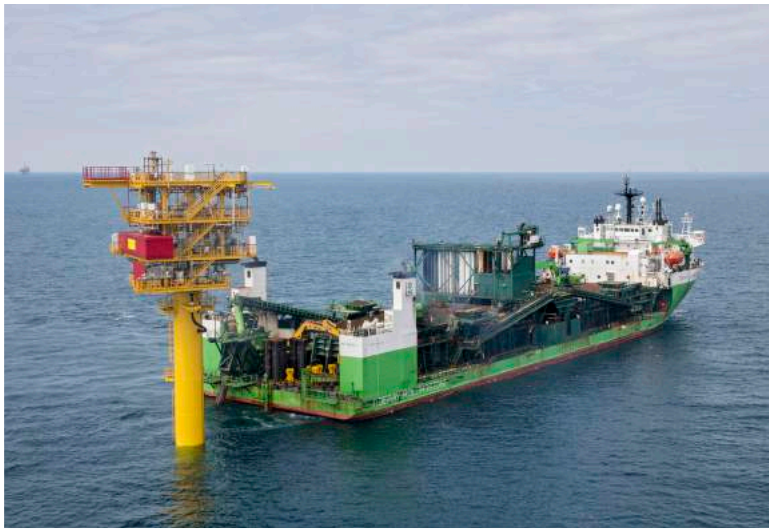
DEME

Dredging, Environmental
& Marine Engineering

ACTIVITY REPORT 2017





CREATING LAND FOR THE FUTURE

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06

INTRODUCTION

Company profile

A TRUE GLOBAL SOLUTIONS PROVIDER

DEME is a world leader in the highly specialised fields of dredging, marine engineering and environmental remediation. The Group can build on more than 140 years of know-how and experience and has fostered a pioneering approach throughout its history, being a frontrunner in innovation and new technologies.

While the company's roots are in Belgium, DEME has built a strong presence in all of the world's seas and continents, operating in more than 90 countries. DEME can rely on 4,900 highly skilled professionals across the globe. With a versatile fleet of over 100 vessels, backed by a broad range of auxiliary equipment, DEME can provide solutions for even the most complex projects.

SOLUTIONS FOR GLOBAL CHALLENGES

DEME's 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 DEME's activities originated with its core dredging business, the portfolio diversified substantially over the decades. DEME's solutions include:

- **Dredging and land reclamation**
- **Marine and offshore energy solutions**
- **Infra marine solutions**
- **Environmental solutions**
- **Fluvial and marine resources**

Thanks to its multidisciplinary capabilities, the synergies in many projects, and its integrated corporate structure, DEME has become a global solutions provider.

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.

Message from the Board of Directors

DEME again had a very good year in 2017, realising a turnover of 2.37 billion EUR, representing an increase of 19.3%, and an EBITDA of 456.2 million EUR. We also have a record order book for the coming years. The offshore wind market and infra marine solutions were particularly strong performers for our subsidiaries GeoSea, Tideway and DEME Infra Marine Contractors (DIMCO), while the other activities (dredging, environment, oil & gas, resources) performed well, taking into account the challenging market conditions in these sectors in 2017. Thanks to our multidisciplinary, innovative approach, a broad range of activities, record investments and the acquisition of A2SEA, we were able to keep our results at a healthy level while keeping our net debt very low.

2017 maintains our solid track record of delivering world-class solutions that address the global challenges of today: rising sea levels, a growing population, the scarcity of mineral resources, polluted rivers and soils and the reduction of CO_2 emissions. Our 4,900 employees worldwide have a deep understanding of the challenges our customers face and a passion to provide their technical expertise and innovative solutions to solve even the most complex projects.

It has been an exceptionally busy year for DEME's infra marine solutions provider DIMCO, with three prestigious contracts awarded for major infrastructure projects in the Netherlands. With the RijnlandRoute, New Lock Terneuzen and Blankenburg Tunnel, we can optimally exploit the synergies in our activities within the DEME Group. Projects in the Benelux home market are important for the further development of our global operations. In the meantime DIMCO, together with its partners, are preparing the works for the massive Fehmarnbelt project, including a tunnel of 18 km between Germany and Denmark.

In the renewables market, DEME is maintaining its strong momentum with a high level of project execution by GeoSea and Tideway. Major milestones were the acquisitions of the Danish offshore wind company A2SEA and the Belgium-based, geotechnical and geological offshore site investigation specialist G-tec. This will enable DEME to further reinforce its fully integrated services and solutions portfolio.

GeoSea expanded its global footprint to Asia. In a unique joint venture partnership with COSCO, the first offshore wind farm is being realised off China's east coast. We also entered into a Cooperation Agreement with CSBC Corporation to develop offshore wind projects in Taiwan. As a pioneering company in offshore renewable energy, this is an excellent opportunity for exporting the experience and knowledge we have gained from projects in Belgium and Europe.

In the dredging market, activities are still dominated by the Tuas Terminal Phase 1 mega project in Singapore. A new contract was secured by Dredging International Asia Pacific (DIAP) for Ayer Merbau Reclamation Phase 2, which is another addition to the land surface area of Jurong Island on which one of the world's largest oil refining and petrochemical hubs is being built as part of Singapore's national development. In the Middle East, DEME will execute dredging works for the Old Port Redevelopment Project in Qatar. A high level of activity was maintained in Africa, Europe, India and Latin America. A major contract was secured in Latin America for the deepening and maintenance dredging of the Canal Martín García, located between

Luc Bertrand
Chairman DEME

Alain Bernard
Director - Chief Executive Officer DEME

Uruguay and Argentina. In Belgium, DEME was awarded the contract for Elia's Modular Offshore Grid in the North Sea, including the supply, installation and maintenance of the submarine power cables.

DEME's marine aggregate specialist DEME Building Materials (DBM) has added another vessel, 'Mellina', to its fleet to further strengthen its position as one of the leading marine aggregate dredging companies in Europe. 'Mellina' was already in the DEME fleet but has been converted and equipped with a new loading and unloading installation for the sustainable dredging and transportation of marine aggregates.

DEME Environmental Contractors (DEC) has started major soil remediation works at the Blue Gate site in Antwerp, Belgium, whereby 63 ha of land will be remediated to redevelop an industrial brownfield site into a high value, eco-efficient industrial park.

Against the background of a growing population and an increasing scarcity of resources, DEME's marine harvesting specialist Global Sea Mineral Resources (GSR) is developing breakthrough, deep sea mining technologies. The so-called tracked soil testing device 'Patania' was successfully tested at a water depth of 4,500 m in the Pacific Ocean. The 'Patania' serves as a testing vehicle that will lead to the development of a larger tracked nodule collector, expected to be ready in 2019. With this pioneering vehicle, the actual harvesting of the nodules can begin.

Finally, we should mention our strong and dynamic DEME Concessions division and project financing division. They help to create and finance many new opportunities for all our group companies including PPP-projects, concessions, etc.

As a company with a maritime heritage of more than 140 years, DEME has always been a pioneer in innovation and new technologies. Last year's highlights include the addition of two pioneering dual fuel hoppers to the dredging fleet, 'Minerva' and 'Scheldt River'. The delivery marked a major milestone in the dredging industry, as these are the first dredgers in the world to operate on LNG.

The fleet investment programme will continue this year, with the offshore installation vessel 'Apollo' and multipurpose vessel 'Living Stone' joining the fleet. This ambitious fleet investment programme means that DEME will operate the youngest, most modern and versatile fleet in the dredging, offshore renewables and oil & gas industry. DEME seized the opportunity when steel prices were favourable and shipyards had ample capacity, ensuring its investment in a new fleet was made at precisely the right time.

DEME is committed to providing employees and subcontractors with a safe working environment - nothing is more important than keeping our people safe. Safety is at the core of our operations and we strive for zero incidents. DEME's safety programme CHILD5 continues apace. Our commitment to safety drives us to strive for continuous improvement. As a result, several initiatives were organised last year including a Global Safety Stand Down on all vessels and sites to raise awareness about working safely.

The integrity of our company is equally important. DEME is strictly committed to the highest standards of compliance, as well as business ethics and expects all employees worldwide to adhere to these standards. We do not accept compromises and continually aim to raise the bar in this area.

As mentioned, continuous improvement is at the heart of our operations. The DRIVE programme covers a wide range of operational improvements during all project phases. The Opportunity & Risk Management system was further refined based on the 2016 insights and lessons learnt. This has resulted in an improved, deeply embedded, risk-aware entrepreneurship by all stakeholders in the DEME entities.

Looking ahead, we are well positioned for a strong 2018. The year got off to a good start

with important contract awards in several different sectors and areas. Major projects are starting such as the Hornsea Project One offshore wind farm in the UK, the New Lock Terneuzen and Blankenburg Tunnel in the Netherlands. The multitude of projects led to the launch of a big recruitment campaign in 2018 in search of additional staff and crew in different fields of activity.

Global developments are fundamentally changing our markets. But DEME is not standing still. We are continually looking forward and currently we are focusing on a series of initiatives with the goal to develop breakthrough innovative solutions, tackling challenges like the 'plastic soup' threatening our oceans, the storage of energy to balance electricity demand and supply, or the Blue Cluster, a partnership in Belgium where we look to smartly combine sustainability and economic growth. For example, DEME is a pioneer in renewable energy developments and coastal protection, two of the initiatives driven by the partners of the Blue Cluster platform and where DEME is continuously looking to develop new solutions together with a multitude of partners and small and medium enterprises.

On the macroeconomic front, the landscape is also changing dramatically. The 'One Belt One Road' initiative in Asia, the further digitalisation transforming the way we live and work, new business models changing the market… However, we aim to be 'ahead of the curve' and believe we have the right technologies, innovative spirit, employees and partnerships to succeed and to remain a leader in our industry.

DEME continues to contribute to a sustainable future with the innovative solutions we offer. The UN General Assembly formulated 17 global Sustainable Development Goals (SDGs) tackling major issues such as ending poverty, protecting the planet and ensuring prosperity for all. The UN aims to achieve them by 2030. DEME's solutions for global challenges already align strongly with the UN goals but we will continue to identify where the company has the biggest potential to contribute to the SDGs and will further incorporate them into our daily operations.

We are proud of last year's achievements. But DEME is not resting on its laurels. In 2018 we will remain focused, we will pioneer and innovate, and continue to look to the future to make sure we are fully ready for developments to come.

Alain Bernard
Director - Chief Executive Officer DEME

Luc Bertrand
Chairman DEME

DEME continues to contribute to a sustainable future with the innovative solutions we offer.

Board of Directors

LUC BERTRAND
Chairman DEME

RENAUD BENTÉGEAT
Managing Director CFE / Director DEME

ALAIN BERNARD
JOHN-ERIC BERTRAND
PIET DEJONGHE
KOEN JANSSEN
JAN SUYKENS
Directors

* It is with deep regret that we announce the death of our friend and colleague Martin Ockier, Area Director Benelux, who sadly passed away on March 5, 2018. Martin's career with DEME spanned more than 30 years. Given his vast experience and wisdom, Martin became a beacon, guide, mentor and coach for many of us within DEME, the management team, the Area Benelux and DIMCO. His entrepreneurship, leadership, technical and strategic mastery and social ingenuity will be truly missed.

Management Team

Lower row, from left to right:

STEVEN POPPE Area Director Africa

ERIC TANCRÉ Area Director North Europe

PHILIP HERMANS Area Director Asia, Oceania and North America / General Manager Dredging International

ELS VERBRAECKEN Chief Financial Officer

TOM LENAERTS Chief Legal Officer

ALAIN BERNARD Director / Chief Executive Officer

CHRISTEL GOETSCHALCKX Secretary to the Management Team

PIERRE POTVLIEGE Area Director Indian Subcontinent

MARTIN OCKIER Area Director Benelux*

THEO VAN DE KERCKHOVE Chief Operating Officer

Upper row, from left to right:

BERNARD PAQUOT Area Director Middle East

PIERRE CATTEAU Area Director Mediterranean, South and Middle Americas

WIM BIESEMANS Managing Director DEME Concessions

HANS CASIER Human Resources Manager

DIRK POPPE Area Director Eastern Europe and Russia / Managing Director Ecoterres Holding

HUGO BOUVY General Manager Tideway

LUCAS BOLS General Manager Tideway

BART VERBOOMEN Manager Technical Department / General Manager Baggerwerken Decloedt & Zoon

LUC VANDENBULCKE Deputy Chief Operating Officer / Managing Director GeoSea

Financial highlights

DEME Group figures

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

	2017	2016	2015
Turnover	2,356.0	1,978.2	2,286.1
EBITDA	455.5	447.4	489.2
EBIT	230.5	227.0	269.2
Net result share of the Group	155.1	155.3	199.2
Order book	3,520.0	3,800.0	3,185.0
Average # personnel (in FTE)	4,440	4,232	4,099
Shareholders' equity (excl. minority interests)	1,321.8	1,220.6	1,132.9
Net financial debt	-285.7	-151.2	-269.5
Total assets	3,521.2	3,288.7	3,149.8
Total investments	647.8	258.1	343.1
Dividend of the year	55.0	55.0	60.0

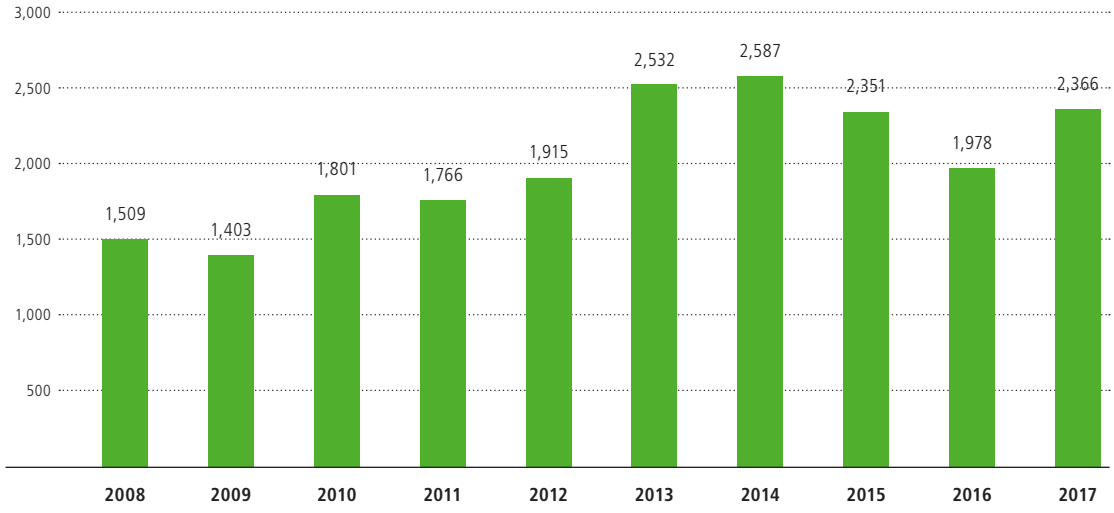
DEME Group economic figures

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

	2017	2016	2015
Turnover	2,365.7	1,978.2	2,351.0
EBITDA	456.2	450.1	558.4
EBIT	222.6	217.6	318.4
Net result share of the Group	155.1	155.3	199.2
Order book	3,520.0	3,800.0	3,185.0
Average # personnel (in FTE)	4,488	4,284	4,186
Shareholders' equity (excl. minority interests)	1,321.8	1,220.6	1,132.9
Net financial debt	-296.2	-154.6	-266.7
Total assets	3,572.4	3,312.4	3,233.4
Total investments	652.0	272.0	343.9
Dividend of the year	55.0	55.0	60.0

DEME Group evolution of consolidated turnover

economic figures (in millions of EUR)



Definitions:

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

EBIT is operating result excluding impairment losses.

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.

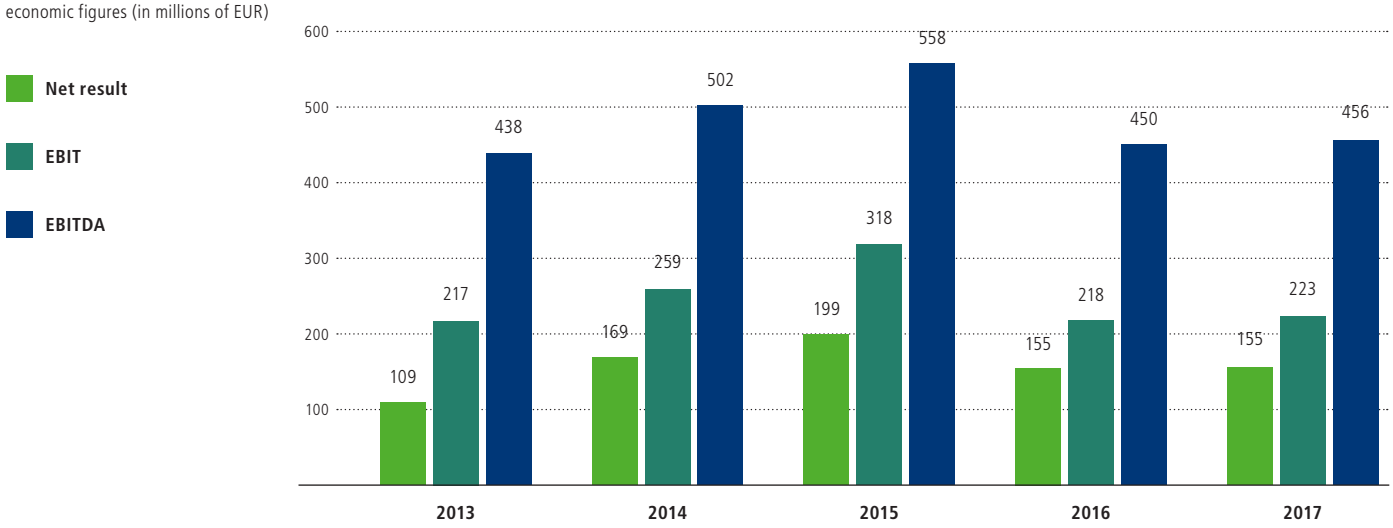
Total investments is the amount paid for the acquisition of intangible, tangible and financial fixed assets.

(*) Following the introduction of the new 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.

(**) In this presentation, the group companies that are jointly controlled by DEME are still proportionally integrated. Although this is not in accordance with the new IFRS 10 and IFRS 11 accounting standards, it gives a more complete and economical view of the operations and assets/liabilities of those companies. In the equity accounting as applied under IFRS (*), the contribution of the group companies jointly controlled by DEME is summarised and presented as one single item on the balance sheet and in the income statement.

DEME Group evolution of net result, EBIT and EBITDA

economic figures (in millions of EUR)



DEME Group evolution of consolidated turnover

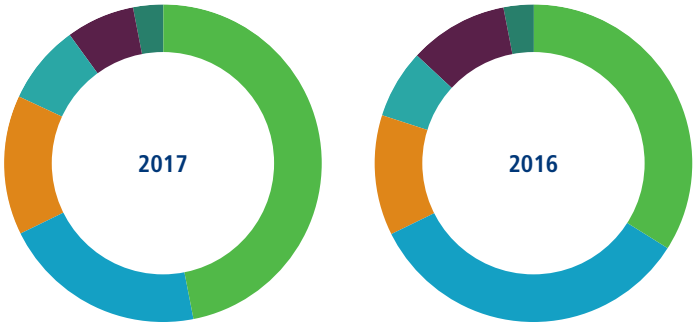
economic figures (in %)

BY REGION

	2017	2016
Europe - EU	69%	56%
Asia & Oceania	12%	13%
Africa	10%	12%
Indian subcontinent	4%	4%
America	3%	8%
Europe - non EU	2%	4%
Middle East	0%	3%

BY ACTIVITY

	2017	2016
Marine works	47%	34%
Capital dredging	21%	34%
Maintenance dredging	14%	12%
Fallpipe & landfalls	8%	7%
Environmental	7%	10%
Civil works	3%	3%



BY CUSTOMER

	2017	2016
Renewables	48%	29%
Government	34%	43%
Other	10%	15%
Oil & Gas	6%	11%
Mining	2%	2%

DEME's core values

DEME has established a set of standards applicable to its business units and subsidiaries worldwide. They are the centre of DEME's commitment to consistently deliver excellence to the customer and value to the company. DEME also expects suppliers, subcontractors and partners to work to these standards. The core values at the very foundation of DEME are summarised by the acronym STRIVE.

SAFETY

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

TECHNICAL LEADERSHIP

With an open mind and the right team spirit, we continue to improve in all aspects of our work process and find trailblazing solutions to the needs and challenges of our customers.

RESPECT AND INTEGRITY

Our employees are trained and motivated to meet the challenges ahead. Individuality and diversity will be valued and performance is recognised. Our relationship 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 AND IMAGINATION

Innovation is the cornerstone of DEME's achievements. The company continuously pushes its boundaries by developing new, value adding services and solutions.

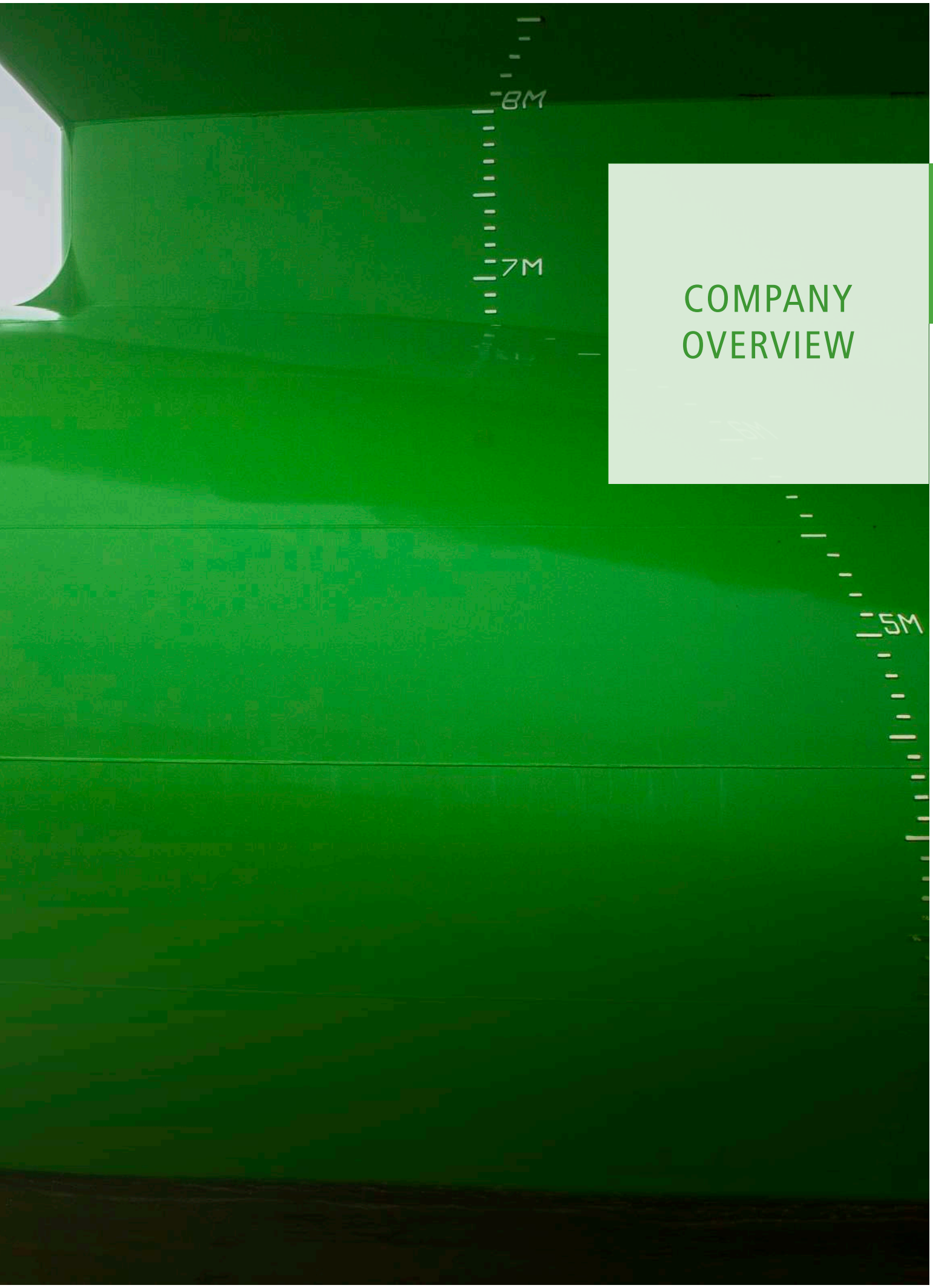
VALUE CREATION

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 the company healthy.

ENVIRONMENT

We protect the environment and avoid adverse impact to the environment and the communities in which we do business.

The core values at the very foundation of DEME are summarised by the acronym STRIVE.



COMPANY OVERVIEW

Sustainability

DEME focuses on providing sustainable solutions for the global challenges we all face. These include rising sea levels, soil and water pollution, increasing population growth, a scarcity of mineral resources and increasing CO_2 emissions.

Many of DEME's values and sustainable goals are aligned with the United Nations (UN) 17 Sustainable Development Goals. Taking inspiration from the UN Goals, DEME committed itself to the Sustainable Development Goals of the Belgian Charter in October 2016.

We offer sustainable, specialised solutions in the global dredging, marine engineering and environmental sectors. DEME is playing a leading role in creating affordable, reliable renewable energy for all, through many initiatives in the green and blue energy sector. We are tackling the scarcity of minerals by exploring the potential of sustainable, deepsea, marine mineral harvesting.

Our specialist environmental companies are carrying out complex soil remediation projects, where we clean historically polluted sites so they can be fully reused for housing, business and recreational use. In other initiatives, we are building innovative coastal infrastructure to handle the increase in extreme weather events to protect the world's growing coastal communities.

As well as addressing these issues in a broad sense, these sustainable goals are embedded in our own company and they inspire our innovations within the company itself and in projects across the globe.

For example, DEME has embarked on an ambitious fleet investment programme where all new vessels are fitted with the most advanced equipment, not only technically speaking but also from an environmental point of view. They are equipped with solar panels, heat recuperation and dual fuel main engines that can run on natural gas and diesel oil. Our newly built dredgers are the first in the world to be able to run purely on LNG.

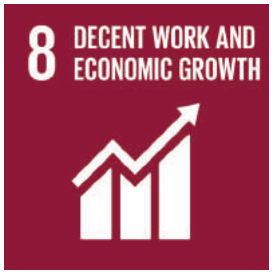
We also deploy innovative techniques at our project sites to ensure that they are sustainable developments. This was highlighted recently in Qatar when DEME's subsidiary, the Middle East Dredging Company (MEDCO), carried out dredging and land reclamation works for Hamad Port. As part of an environmental mitigation project, seagrass, mangrove trees and corals were carefully relocated to protect them from the impact of the port development project.

With DEME4Life the company actively contributes to achieving the SDGs, fostering strong partnerships with charitable and non-governmental organisations focused on improving the living conditions of people in the communities where DEME works and lives.

CEO Alain Bernard signing the Belgian SDG Charter

Taking inspiration from the UN Goals, DEME committed itself to the Sustainable Development Goals of the Belgian Charter in October 2016.

SUSTAINABLE DEVELOPMENT GOALS



People at DEME

Furthering its aim of becoming an 'Employer of Choice' – the preferred employer within the dredging, environmental and marine engineering industry, in Belgium and beyond – DEME has focused a lot of effort on being a more flexible employer. The company has launched a string of initiatives related to home working, mobility and flexible working hours.

In the summer the HR team conducted a survey about the mobility issue and possible solutions to mitigate it. Traffic congestion is a significant problem around Antwerp. The employee response to the new policy was overwhelmingly positive.

Ghana
With a diverse and international employee base DEME has a strong presence in all continents

Belgium
DEME was recognised with the Randstad Award for most attractive employer in Belgium

Employees have the possibility to work from home or can make use of several state-of-the-art, fully equipped satellite offices, all located by good public transport routes.

DEME believes these measures will give employees a more predictable work-life balance and it will also reduce the turnover in staff, who leave the company because of the commuting problems.

INTERNATIONAL RECRUITMENT CAMPAIGN

DEME also launched a major international recruitment campaign in 2017. Given the success of DEME and all of its subsidiaries, the company wants to further boost its diverse and international employee base. At a Welcome Day for about 200 new employees, there were signs that the recruitment drive is seeing results. Employees from thirty different nationalities were represented. DEME has been particularly active in Spain, Portugal and Eastern Europe visiting university campuses, attending regional events and working with local employment agencies.

DEME has a very strong employer brand in Belgium and the Netherlands and is also reinforcing this in other countries. In 2017 the company was recognised with the **Randstad Award for most attractive employer of Belgium** The award is based on the results of a survey among 11,000 respondents. In addition, DEME also took home the Lifetime Achievement Award based on the ratings which the company has been getting since 2009 in the Randstad Employer Brand Research.

EMPLOYEE APP 'SPENCER FOR DEME'

The Spencer for DEME app, introduced in 2017, is a mobile solution for internal communication and cooperation. For employees Spencer is the mobile app to stay on top of the latest DEME news and to get easy access to work related content and tools on the go. With Spencer DEME wants to further improve communication and collaboration by bringing together information and different company applications in one place, making it a real mobile hub.

TIME TO

The performance management tool 'Time To' helps employees and managers to evaluate their performance, competencies and development needs. A dedicated 'Time To' for the crew will be rolled out in 2018.

EPC COMMUNITY

In 2017 DEME added to its extensive range of courses by launching 'EPC Community', which went live in November. This virtual learning platform supports employees with the more technical issues surrounding EPC projects. DEME is keen to provide more courses via virtual learning, giving staff and crew more flexibility.

Health, Safety and Environment

DEME continually aims to improve its health, safety and environmental performance and 2017 was no exception. However, what is exceptional in 2017 – and shows just how seriously safety issues are taken – is that the company carried out a worldwide Safety Stand Down for the first time in its history. Every project site, office and vessel in the entire fleet halted work for half a day so the company could reinforce the 'safety first' message again.

This followed a QHSE-S performance record, which was not up to the usual high standards in the first quarter, and a significant incident on one of the dredgers. The QHSE-S team decided to take immediate action and call for a Safety Stand Down, which was a move fully supported by the management and DEME's shareholders. A thorough incident investigation then led to an action plan with more than 40 action points.

DEME's Chief Executive Officer, Alain Bernard, reiterated that all employees have **'Stop work authority'** – that is to say, if anyone feels a situation is unsafe or not up to DEME's QHSE-S standards, he/she has the right, even more … he/she has the duty to stop the work.

Hazard Hunts were organised on all the vessels and the offices, whereby employees identify any risks or potential dangers in their working environment.

At the same time, DEME initiated a **Safety Charter**, which urged that everyone should take care of each other. All employees were invited to sign it. An accompanying **safety video** was produced, where the crew involved in the incident urged their colleagues to take safety seriously.

Additionally, a special **Task Force** has been established which includes representatives from marine operations, QHSE-S and lifting specialists. The Task Force is systematically visiting each vessel in the fleet outlining new safety procedures and providing training for the crew.

HIGH POTENTIAL (HIPO) INCIDENTS ANALYSIS

In 2017, DEME introduced the High Potential (HIPO) Incidents analysis system, which focuses on incidents that could have severe consequences for the company's quality, health, safety or environmental standards.

A HIPO analysis is carried out on a quarterly basis for the entire DEME Group. This highlights any concerning developments or incidents that need to be addressed as soon as possible. For example, by analysing QHSE incidents that occurred during marine operations, lifting, earthmoving etc., potential issues are flagged up straightaway and the management and QHSE-S team use this information to develop a targeted action plan. This can include poster campaigns, additional training, extra toolboxes, management inspections and overall process improvements.

The findings from the HIPO analysis are also an important tool to help DEME staff immediately take the necessary measures in their particular

CEO Alain Bernard signs the DEME Safety Charter

Earthmoving equipment blind spot awareness campaign

area of responsibility – whether they are on board a vessel, on site or involved in a project.

KEY PERFORMANCE INDICATORS

DEME uses a 'Key Performance Indicator (KPI) QHSE-S Dashboard' as a means of monitoring performance.

Timely reporting of incidents, toolbox participations, inspections, actions closed out, observations and other more specific KPIs are constantly monitored. With these KPIs, we show interests and set targets to continuous improvement of our safety performances within the DEME Group.

CHILD5

DEME's safety programme CHILD (Colleagues Help Injuries to Leave DEME) continues apace. The CHILD5 safety awareness sessions, which address leadership, communication, collaboration and engagement, were attended by more than 800 employees in 2017. Also, an awareness campaign was organised regarding blind spots on earthmoving equipment.

SAFETY MOMENT DAY

Each year a global DEME Safety Moment Day is organised. In 2017 the theme was any form of lifting. All the lifting procedures have been mapped so each employee can follow the identified best practice for any specific lift.

CO_2 PERFORMANCE LADDER

Reducing greenhouse gas emissions is essential for managing climate change. DEME contributes on the one hand to the reduction of its own greenhouse gas emissions and the diversification of energy sources in the realisation of its projects. To achieve this, all necessary plans are created by different departments (QHSE, Technical Department, DRIVE, ...) both at project and company level. The reduction of greenhouse gases is part of DEME's integrated environmental management system. For this DEME was rewarded again with an Awareness Certificate Level 5 from the CO_2 Performance Ladder.

The objectives aimed at both DEME's direct and indirect greenhouse gas emissions arising from its own activities and from the supply chain.

On the other hand DEME continues to actively search for sustainable ideas, initiatives and technical solutions in the fight against global greenhouse gas emissions.

Despite the fact that global emissions from the maritime sector are currently not bound to reduction targets, DEME is constantly looking for sustainable alternative energy sources within its multitude of activities.

The CHILD5 campaign runs on every vessel and at every project site and office across the globe

Innovation

AT THE HEART OF DEME'S SUSTAINABLE GROWTH

Innovation and pushing the boundaries continues to be at the heart of DEME - it is actually one of the company's core values. DEME understands that innovation gives the company an edge in this increasingly competitive environment.

DEME's investments in new technology prove precisely how important innovation is to the company. Employees across the globe collaborate on technology developments with the goal to introduce sustainable solutions in the markets where the company operates. DEME considers the close cooperation between sites, vessels, project management teams, technical and engineering departments to be the key element in delivering innovative solutions to its customers.

A COLLABORATIVE INNOVATION CULTURE

A great idea can come from any employee. That's why DEME has created several employee driven innovation initiatives, leading to real value creation.

"DEMEx" focuses on disruptive innovation, tapping into young talents to identify bold business opportunities for DEME. The **"Co-creating our future"** event, organised early 2017, brought together crew and staff to brainstorm on future business trends and to work together on innovative ideas.

In 2017 the **"DEME Innovation Diver"** engaged all employees worldwide to respond to 13 different challenges and to submit ideas for new solutions. About 700 employees were joining forces and collaborated through an online innovation platform. An impressive number of over 300 new ideas have been submitted, and a selection of already successfully realised ideas was honoured with an Innovation Diver Award. A range of the winning ideas included:

DEME innovation diver

'LIVING STONE' CABLE INSTALLATION SYSTEM

DEME's newest addition to the fleet, the multipurpose vessel 'Living Stone', will have a unique cable installation system on board. The cable installation system is able to install cables in a completely new and innovative way. Well aware that the offshore wind industry is keen to reduce costs, Tideway engineers have designed a system whereby the 'Living Stone' can install one cable, while fully preparing the second one on deck. This minimises the time needed for preparation of the cables, which saves significant time and costs. Also, fewer joints are required when installing cables, minimising the risk of damaging the cable, increasing the vessel's workability and improving production rates.

Cable installation system designed by Tideway

SPUDCAN SHOES FOR OFFSHORE INSTALLATION VESSEL 'INNOVATION'

The offshore installation vessel 'Innovation' was fitted with spudcan shoes to reduce the pressure of the legs on the seabed, enabling the vessel to work on less solid surfaces. Due to reduced cycle times, the project execution time can be cut down by several weeks. In 2017, the removable spudcan shoes were deployed for foundation installation at the **Galloper** and **Rentel** offshore wind farms.

MOORING ROPE HANDLES

With the goal to increase crew safety during mooring and unmooring activities, a rope handle was introduced for the safe and efficient lifting of the mooring rope. By installing a rope handle, crew members can keep their hands out of the risk zone situated between the rope and the bollard. Using rope handles also requires less effort to lift a heavy and wet rope.

AUTONOMOUS VEHICLES FOR SURVEYING

Unmanned vehicles, or underwater drones, have been tested for underwater survey activities. The vehicle can be launched from a cable laying, jack-up or trenching vessel and can perform the survey autonomously. This new survey method guarantees higher and faster availability of survey data.

DEME has created several employee driven innovation initiatives, leading to real value creation.

PARTNERING FOR INNOVATION

DEME has consistently created strong partnerships with other leading companies, universities and academic institutions as well as governmental organisations to work together on research and innovation. This blend of knowledge and creativity has led to some new ideas for sustainable solutions to some of the world's environmental and economic challenges.

EDULIS - CULTIVATING MUSSELS AT OFFSHORE WIND FARMS

With the Edulis project, the Belgian Institute for Agriculture and Fisheries Research (ILVO) and Ghent University have started a trial project to examine if mussels can be cultivated at wind farms off the coast of Belgium. The institutions are carrying out the project, called Noordzee Aquacultuur (North Sea Aquaculture), together with a consortium of seven companies, including DEME.

The first breeding lines for mussels were installed at the **C-Power wind farm** in May 2017. Experts should be able to make a conclusion about the ecological and economic feasibility of cultivating mussels at wind farms within two years.

De Panne - Belgium
Coastbusters installation of eco-friendly reefs to prevent coastal erosion

COASTBUSTERS - PROTECTION AGAINST COASTAL EROSION

Together with other private companies DEME is working with the Belgian Institute for Agriculture and Fisheries Research (ILVO) and Ghent University on a new pilot to test whether eco-friendly reefs can protect the coast from erosion and heavy storms. The reefs utilise natural materials, including mussels, tube worms and seaweed. During the summer of 2017, the first reefs were installed near the Belgian coastal town of **De Panne**.

One reef consists of seaweed planted on large textile mats that are tied to the seabed. A second holds a reef of mussels, for which a cord has been fixed under the surface. After a while, the mussels will fall from the wire and attach themselves to the seabed. If enough mussels stick to each other, their shells will form a natural reef. A third method uses tube worms, which attach their tails to underwater surfaces and secrete a mineral around themselves for protection. Worms will be grouped together to create a worm reef.

Belgium Installation of mussel breeding lines at a wind farm

Fleet investment programme

DRIVING NEW LEVELS OF PERFORMANCE

DEME's drive to innovate is reflected in the company's multi-year fleet investment programme. The programme is focused on further increasing efficiency, both in terms of productivity and environmental performance. The new additions to the fleet are all designed as green vessels equipped with next generation dual fuel engines, capable of running on LNG or diesel fuel, reducing carbon emissions, almost eliminating particulate matter, sulphur oxides (SO_x) and nitrogen oxides (NO_x). It is a logical step for DEME to make the transition to cleaner types of fuel such as LNG to meet customer requirements and to meet and exceed changing legislation and emission reduction targets.

Other high-tech features on board of the newbuilds will enable DEME to continue deploying a state-of-the-art fleet for even the most challenging projects in the dredging, offshore renewables and oil & gas market.

"Thanks to our innovative culture we can stay ahead of the curve and can make a difference with new technologies. After all, the world is changing very quickly."

James Law

MASTER
'SCHELDT RIVER'

TSHDs 'MINERVA' AND 'SCHELDT RIVER'

In 2017 the dual fuel trailing suction hopper dredgers (TSHDs) 'Minerva' and 'Scheldt River' joined the DEME fleet. The fleet entry of both dredgers marked a major milestone for the dredging industry. The 3,500 m^3 'Minerva' and 8,400 m^3 'Scheldt River' are the first dredging vessels in the world equipped with dual fuel engines and capable of operating in full LNG mode. The vessels have a "Green Passport" and "Clean Design" notation, complying with and even doing better than the most strict international emission requirements.

The innovative vessel design of 'Scheldt River' and 'Minerva' includes two speed propulsion gear boxes and combinatory mode propeller thrust control, which results in at least 10% fuel savings during dredging operations. The 'Scheldt River' also has a Dynamic Position & Dynamic Tracking (DP/ DT) system, further enhancing manoeuvrability and position keeping. The dredge pump of 'Scheldt River' is driven by a hybrid drive-diesel direct plus electric motor. Efficient power management solutions are made possible, and the dredge pump is achieving an excellent performance both in trailing and in shore discharge mode.

TSHD 'Scheldt River' entered the fleet in September 2017

TSHD 'Minerva' Naming ceremony of the world's first dual fuel TSHD 'Minerva'

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1 TSHD 'BONNY RIVER'

With the 15,000 m³ 'Bonny River' DEME is investing in a new generation of trailing suction hopper dredgers (TSHD), trendsetting in terms of coastal protection and for dredging hard soils. The vessel is due to be delivered at the end of 2018. Thanks to the combination of unique characteristics such as a very long suction pipe, a large transport capacity with limited draught and an additional, heavy-duty trail pipe with rock draghead, this multidisciplinary vessel can be used effectively in shallow water and in hard soils and is at the same time capable of winning sand in very deep water. 'Bonny River' will be able to minimise the turbidity generated by process water which facilitates dredging in environmentally sensitive areas. Moreover, the hydrodynamic hull and combinatory mode propeller thrust control ensure further optimisation of the fuel consumption and a minimal carbon footprint.

2 CSD 'SPARTACUS'

In September 2017 the first steel cutting ceremony marked the start of the construction of cutter suction dredger (CSD) 'Spartacus' at the Royal IHC shipyard in the Netherlands. With a total installed capacity of 44,180 kW, 'Spartacus' is simply the most powerful CSD that has ever been built. The vessel will be 100% more powerful than DEME's existing CSDs, which are already giants within their league. Spartacus' sheer cutting power will enable the vessel to cut harder soils at production rates that have not been possible before. This means that work can be executed by the cutter dredger rather than relying on the use of dynamite and blasting. Furthermore 'Spartacus' can dredge up to an exceptional -45 m and will have unprecedented autonomy and pumping distance. It will be the first dual fuel CSD in the world. The vessel is expected to join the fleet in 2019.

3 OFFSHORE INSTALLATION VESSEL 'ORION'

Another giant DEME is investing in will largely serve the offshore wind market. The 216.5 m long offshore installation vessel features a crane with an unseen lifting capacity of 5,000 tonnes. 'Orion' has truly great transport capacity and can take multiple, very large and heavy monopiles and transition pieces in a single shipment. With DP3 (Dynamic Positioning type 3) technology the offshore installation vessel can continue operations under the most challenging conditions.

Environmental considerations have been an important element of the vessel design. 'Orion' has dual fuel engines and can run on natural gas (LNG). It will have a 'Green Passport' and 'Clean Design' notation. It will also have other environmental innovations on board, such as a waste heat recovery system that converts heat from the exhaust gases to electrical energy. This next generation installation vessel will enter the DEME fleet in 2019.

4 OFFSHORE INSTALLATION PLATFORM 'APOLLO'

The new jack-up vessel 'Apollo' will join the fleet of of self-propelled jack-ups in 2018. This installation vessel has extremely long lattice legs allowing the vessel to jack-up in up to 65 m water depth. She has a crane capacity of 800 tonnes. Long legs mean the vessel is easily able to serve the offshore wind industry, as well as the oil & gas markets in deeper waters.

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5 SHEERLEGS 'GULLIVER'

The 4,000-tonne SWL crane vessel 'Gulliver', due to be operated by Scaldis, is set to enter service in 2018. The vessel will carry out activities including installing offshore infrastructures and decommissioning projects for the oil & gas industry and for offshore wind farms.

CSD 'BLANEW'

Another very specialised vessel is the 'Blanew', which is a small and compact electrically driven cutter suction dredger specially designed for dredging works in marinas, canals and lakes. The CSD is self-manoeuvring which allows it to dredge between jetties and pontoons without removing them. In order to reduce the exhaust gas emissions and to minimise noise when working in marinas, 'Blanew' will be powered by means of an umbilical electric cable, which is directly connected to the shore-based network. The vessel therefore also has the capability to run on renewable energy.

6 MULTIPURPOSE VESSEL 'LIVING STONE', A REAL GAME-CHANGER

DEME's cable laying and multipurpose vessel 'Living Stone' will join Tideway's fleet in 2018. 'Living Stone' is extremely versatile with two 5,000-tonne cable turntables located below the main deck. The vessel 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.

The 'Living Stone' will be a truly flexible vessel. She is a cable layer, a trenching support vessel but can also perform rock placement works with a vertical fallpipe system able to reach depths of 1,000 m.

The vessel will have a unique cable installation system on board, an innovative solution entirely developed in-house. The cable installation system is able to install cables in a completely new and innovative way. Well aware that the offshore wind industry is keen to reduce costs, Tideway has designed a system whereby the 'Living Stone' can install one cable, while fully preparing the second one on deck. This minimises the time needed for preparation of the cables, which saves significant time and costs. Also, fewer joints are required when installing cables, minimising the risk of damaging the cable, increasing the vessel's workability and improving production rates. With more than a 10,000 tonne cable capacity, dual fuel engines and DP3 capabilities, 'Living Stone' is a real game-changer.

Finance solutions

DEME'S EXPORT & PROJECT FINANCE DEPARTMENT - A PROACTIVE FINANCING PARTNER

The Export & Project Finance Department assembles tailor-made financing packages and negotiates these packages with potential investors, financial institutions and authorities. These structures offer financing opportunities to clients in both developed and emerging markets, that may not have the capability to arrange a similar financing solution locally, especially with regard to the credit cost, credit tenor or credit amount.

COMPETITIVE AND TRANSPARENT SOLUTIONS

DEME's Export & Project financial solutions have rendered comfort and confidence to clients with competitive, safe and transparent payment solutions. Export finance projects are popular in Africa, but there is also interest from several countries in other regions such as South East Asia, the Middle East and Latin America.

Every financing arrangement is specifically tailored to the requirements of each client and their individual projects. DEME can provide a straight-forward buyer's credit, a soft loan (if the client is eligible for concessional lending), a project finance structure or a combination of all of this.

OECD COMPLIANT

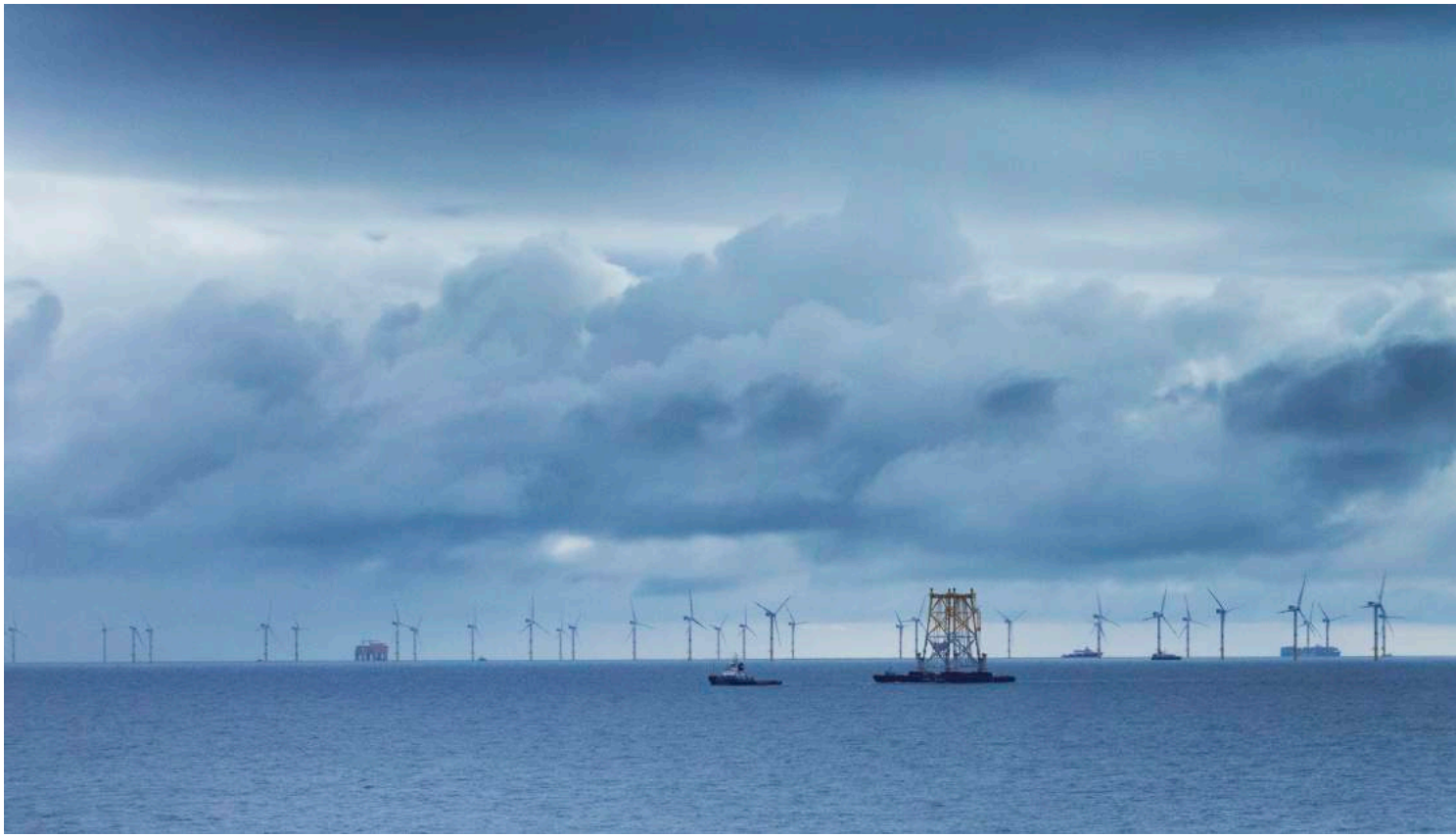
The financing packages are fully compliant with the Organisation for Economic Co-operation and Development (OECD) regulations. The inherent economic, environmental and social sustainability aspects of each project are always considered in order to maximise economic, environmental and social returns concurrently."

LOW INTEREST

DEME has a long-standing relationship with Credendo, the Belgian Export Credit Agency and Finexpo, the Inter Ministerial Committee for Financial Support of Belgian Export. DEME can also tap into several resources associated with its long-standing and fruitful relationships carefully built with a selected pool of international banks. Low interest rates and financing conditions in Europe often mean DEME has an attractive offer for its many international clients.

M&A AND PUBLIC PRIVATE PARTNERSHIPS

The Export and Project Finance Department supports DEME when it is carrying out any M&A activities. In 2017 DEME's subsidiary GeoSea acquired the Danish company A2SEA and the Belgian company G-tec for example. Furthermore, the Export & Project Finance Department works closely with DEME Concessions and was actively involved in the successful tender for the Blankenburg Tunnel in the Netherlands. The team is also busy working on a growing number of projects, which involve public private partnerships.



DEME CONCESSIONS

FOSTERING A TRUE PARTNERSHIP PHILOSOPHY

DEME Concessions brings together all concessions of the DEME Group 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 the DEME Group. DEME Concessions advocates early involvement, underpinned by a true partnering philosophy for the successful joint development of projects. Investments are always linked to DEME's scope of work in a project. Currently, DEME Concessions has committed around EUR 150 million to these projects.

Renewables

Offshore wind farms

MERKUR

DEME Concessions Merkur B.V. has 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 DEME Concessions. Construction is on track at Merkur with all 66 foundations installed in 2017. The wind farm is set to be fully energised in 2019.

RENTEL

The Rentel project - located 40 km north of Ostend - will be the fifth offshore wind project in the Belgian North Sea and comprises 42 turbines. All monopiles and transition pieces of the 309 MW wind farm have been installed in 2017 and the cable laying was executed by DEME's subsidiary Tideway. The total investment is EUR 1.1 billion.

SEASTAR AND MERMAID

Together with the other shareholders of Otary, DEME holds a participation in the concessions for the Seastar (246 MW) and Mermaid (266 MW) offshore wind farms in Belgium. On 27 October 2017, the project developers reached an agreement with the Belgian authorities on the support scheme. It is hoped that this project will achieve financial close by end-2018. The two new wind farms will be developed as one project.

DUNKIRK OFFSHORE WIND FARM

In May 2017, the French energy regulator, Commission de Régulation de l'Energie (CRE), pre-selected DEME Concessions Wind, amongst others, to potentially develop an offshore wind farm project with a capacity of up to 750 MW off Dunkirk. The tender is expected to take place in 2018.

Wave & Tidal

MEYGEN

DEME Concessions acquired a minority interest in the Scottish development company Tidal Power Scotland Limited (TPSL). Together with Scottish Enterprise, TPSL controls the MeyGen project, the world's first tidal stream turbine array power station connected to the electricity grid.

At the end of 2016, DEME's subsidiary GeoSea successfully installed the four gravity-based foundations for Phase 1A of MeyGen. DEME and the MeyGen partners are hoping to get financial close for Phase 1B in 2018.

Besides the participation in TPSL, DEME is involved in DEME Blue Energy (70% DEME Concessions - 30% ParticipatieMaatschappij Vlaanderen) and in cooperation with Nuhma, it is also a partner (50% - 50%) in BluePower, another tidal energy development company. DEME takes part in two other tidal energy developments – the West Islay Tidal Energy Park in Scotland (30 MW) and Fair Head in Northern Ireland (100 MW).

Infrastructure

BLANKENBURG TUNNEL

Rijkswaterstaat (The Directorate-General for Public Works and Water Management of the Netherlands) has awarded the EUR 1 billion, Public-Private Partnership (PPP) project 'A24 Blankenburg Tunnel' to the BAAK Consortium, which comprises DEME Concessions Infrastructure, Ballast Nedam and Macquarie Capital. The project comprises the design, build, finance and maintenance for a period of 20 years of the existing and new infrastructure.

The A24 Blankenburg Tunnel connects the A20 and the A15 and will improve access to Rotterdam.

Mineral Concessions

Global Sea Mineral Resources (GSR) is a specialist subsidiary of DEME focused on the development of a sustainable marine harvesting industry. In 2013, the International Seabed Authority and GSR signed a 15-year contract for prospecting and exploring polymetallic nodules. GSR has exclusive rights for the exploration of over 76,728 km² of seabed in the eastern part of the Clarion Clipperton Zone (CCZ) of the Central Pacific Ocean.

Continuous improvement

DRIVE

DRIVE is DEME's continuous improvement programme, which is founded on three pillars:

- **DRIVE Operational and Technical provides a pragmatic approach to operational process improvement and bottom-up innovation.**
- **DRIVE Cost focuses on sourcing improvement through the regular renegotiation of framework agreements for the main product families, as well as supplier consolidation across departments and business units.**
- **DRIVE Transactional aims to realise savings, efficiency enhancements and cash out reduction through supporting process improvement.**

DRIVE Operational and Technical focusing on innovation and proactive process improvement

In 2017 the DRIVE programme focused especially on innovation and proactive process improvement during the preparation phase of DEME's projects. DRIVE also aimed to encourage more crew involvement in continuous improvement initiatives.

Over the year there were 58 DRIVE improvement projects - better known as DRIVE exercises - successfully completed on projects worldwide.

Taking inspiration from the Tour de France, the DRIVE team awards yellow and green jerseys every year. The DRIVE yellow jersey is awarded to the area or business unit that realises the highest financial savings from performing DRIVE exercises and the green jersey goes to the business unit carrying out the most DRIVE exercises.

The 2017 yellow jersey went to GeoSea and the green jersey was awarded to the Asia & Oceania Area.

GeoSea's two largest improvement exercises that contributed to the award were both related to technical innovations realised during the project preparation. One was an innovative 'spudcan shoe', which reduces jacking-up time by preventing the spuds from sinking into the seabed, and the other related to a new seafastening method.

The green jersey award to Asia & Oceania was based on 19 successful

DRIVE exercises carried out at large projects in Singapore. Some of these exercises involved highly innovative equipment like Temarock (a specialised and fully automated, multipurpose underwater 3D-printer of rock foundations) and Sirraf. Both are deployed on the Tuas Terminal Phase 1 megaproject in Singapore. Additionally, the Singapore team has been optimising its hired equipment such as improving the production rates of grab cranes. These initiatives all highlight the pragmatic and bottom-up innovation approach that DRIVE Operational and Technical is keen to promote.

Crew involvement

Although DRIVE has always aimed to involve everyone in the improvement process, initially the focus was on project staff when it comes to the continuous improvement process. Now in addition it is aiming to get the crew involved.

For example, project-specific training of crew members is being organised on the two DEME dredging simulators during the preparation phase of projects.

The simulations are designed to highlight what problems they may encounter on their upcoming project. For instance, the dredging crew may have to pump sand over long distances, but not every crew member has done that recently. When they undergo training on the simulator they can push the processes to the limit, before doing it in reality – making it easier to judge the limitations and possibilities. This initiative, which focuses on the skills of the crew, was actually suggested by Captain Christophe Van den Berghe within the scope of the Innovation Diver, DEME's initiative to engage all employees to submit ideas for new solutions.

It is all about preparing in the best way and making sure DEME has the right people with the right skills. The crew involvement programme will be further rolled out in 2018.

DRIVE Cost & Transactional

LAUNCH OF LESS = MORE 2.0

In 2017, DRIVE Cost & Transactional continued to focus on the reduction of overhead costs and reducing indirect spend with the launch of a special overhead reduction programme called Less = More 2.0.

The programme concentrated on three main areas: giving the right reporting tools to the budget owners (making it easier to obtain a transparent cost overview), improving the budget process and special improvement projects - the most important of which is focused on reducing indirect spend.

Similar to DRIVE Operational there are also yellow and green jerseys awarded for DRIVE Cost & Transactional. This year the Purchase & Logistics Department won the yellow jersey. The framework agreement for parts and services related to engine maintenance will continue to have a substantial and positive impact on ship maintenance costs in the coming years. The IT Department wins the green jersey. The Department has successfully mobilised the entire team to realise cost improvements, which has led to no less than 13 successes.

drive

"Project specific training with the hopper simulator has helped to identify and gain a deeper understanding of process limits. This has made it easier to push to these limits once on the project itself."

OMAR AROUA

FIRST MATE TSHD 'BREYDEL'

OPPORTUNITY & RISK MANAGEMENT

During 2017 the corporate Opportunity & Risk Management (ORM) system was further refined based on the 2016 insights and lessons learned. Although the ORM Department was only launched in early 2016 a substantial amount of valuable data was already captured and reported. This has resulted in an improved, and deeply embedded, risk-aware entrepreneurship by all ORM stakeholders within the DEME entities.

ACHIEVEMENTS

The ORM Department has put an early detection mechanism into practice, which swiftly identifies project opportunities and risks, and the necessity for major changes. The evolution of the various risk profiles on projects and within the different DEME clusters is now monitored through interactive and automated dashboards. Identified contingencies are reviewed and reported to the relevant stakeholders and (senior) management at regular intervals.

Substantial developments were performed on the ORM process for complex and/or multidisciplinary projects, in close collaboration with the tender and finance departments. This creates a consistent and integrated ORM strategy. This approach promotes early opportunity and risk awareness and anticipates on timely mitigation measures to safeguard the resources of the company. In addition, this integrated ORM approach leads to timely and transparent knowledge sharing between the various parties.

A dynamic ORM tool for external partners was launched which serves as an ORM compass for projects whereby DEME is (partially) involved. This ORM compass is being adopted by some major infrastructure projects.

During the year a more user-friendly tool was developed to enhance more effective monitoring of mitigation action management for projects in execution. The base elements of the corporate ORM system such as transparency, uniformity and consistency are incorporated in this tool.

During 2017 the various types of opportunities and risks were mapped and analysed both from a corporate view and within each specific cluster. The same analysis was performed between the tender phase and execution phase in order to identify and report on the (evolving) risk profile of the company. ORM status reports are given to (senior) management and respective department heads on a quarterly basis.

COMPLIANCE WITH THE ORM PROCESS

During 2017 the majority of tenders were mostly compliant with the established ORM process. This successful compliance rate was applicable for small, medium and large tenders.

The average compliance rate for projects remained stable, although a limited decrease was noticed at the end of the year. This decrease was mainly linked to the project finalisation phase whereby the final conclusions and lessons learned were not always promptly captured and/or shared between the stakeholders. In 2018 there will be an additional focus on making sure that there is swift feedback in the ORM (post) completion phase.

2018 OBJECTIVES

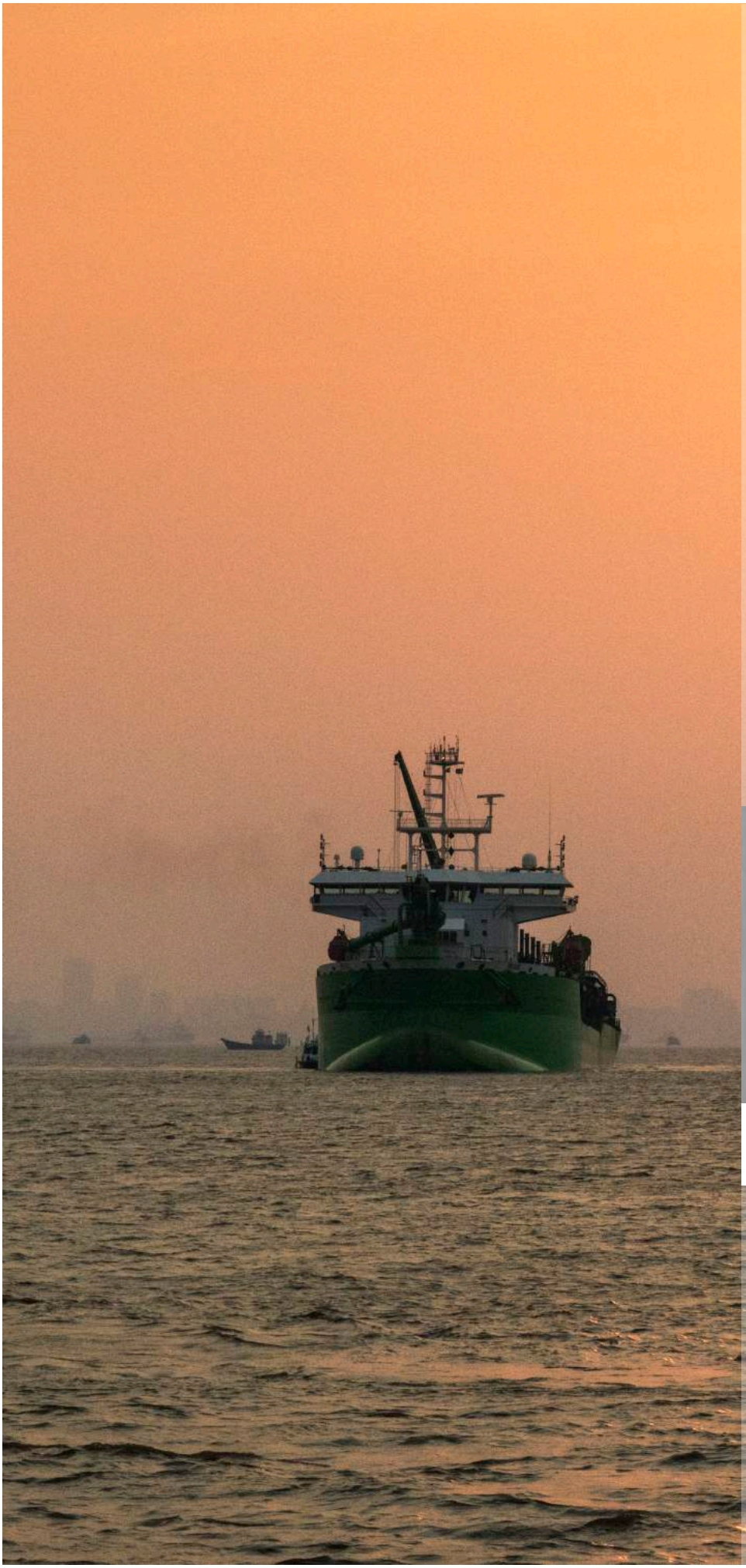
In 2018 the focus on quality will be intensified, while maintaining and increasing the current degree of ORM compliance.

Additional interactive dashboards will be created with a proactive focus on a robust knowledge sharing system.

The ORM Department will support recently acquired companies in relation to their ORM adherence and will enhance qualitative action management within the company.

Conclusions and lessons learned of the identified opportunities and risks will be embedded into the ORM tools in order to further strengthen the company's knowledge about future ORM assessments for upcoming tenders and projects.

DEME will endeavour to detect and valorise new opportunities through the corporate ORM strategy and will further stimulate the innovative character of the company in order to uncover new perspectives.

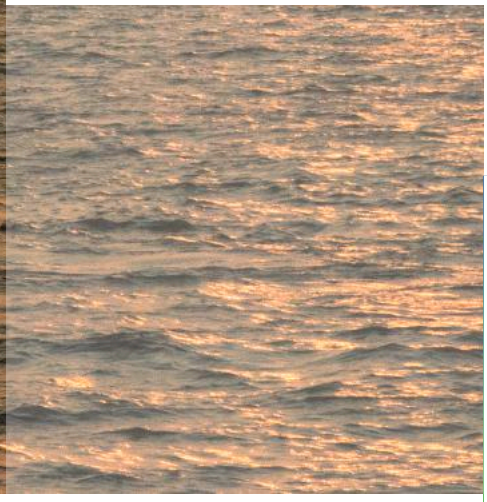


"ORM is a flexible tool which allows us to continuously reassess the risks and correctly factor them into the result of the project. We are also triggered to pay more attention to the opportunities and factor them into our estimate, sometimes making us more competitive than before.

In Seabird Phase 2 in India there is a continuous dialogue between the project team and area management about the main risk prevailing in the project and how to mitigate it, which helps everyone focus on the right priorities. The promotion of this continuous dialogue in itself makes us work more like a team than was sometimes the case before.

During a recent, complex tender our team promptly discovered additional risks, which were triggered by the ORM system. This enabled us to limit the impact through preventive mitigation actions and in turn, this allowed us to make a sharp and competitive offer to our client."

Pierre Potvliege
Area Director Indian Subcontinent



Corporate Social Responsibility

DEME4LIFE

Giving back to the community has always been an important aspect of the DEME culture. Once again in 2017, in line with its fundamental values, DEME4Life supported a wide variety of social projects across the globe. Many of the DEME4Life initiatives are driven by employees, who often spend years living locally, supporting and working with local charitable organisations in the communities where DEME operates and affects lives.

In **Belgium** DEME entered into two new partnerships with organisations that have a focus on volunteer work. "**ToolBox**" aims to actively improve the management of organisations within the social sector by deploying over 100 professionals that provide advice on a voluntary basis. The organisation "**ArmenTeKort**" wants to break the vicious circle of social disadvantages with a buddy programme.

Also, DEME continued the partnership with "**Ondernemer voor Ondernemers**" with the sustainable dredging project on the Congo River, focused on an educational programme to offer Congolese highschool graduates a four-year study programme at the Antwerp Maritime Academy. DEME employees also volunteered at the "**Special Olympics**", where thousands of athletes with intellectual disabilities compete in different sports disciplines. The company also provides financial support for the necessary equipment and logistics. Since a few years, DEME also continues its support for "**De Steenschuit**", a Belgian organisation helping unemployed youngsters to gain skills and experience that will help

Belgium
DEME employees volunteered at the Special Olympics

India
Extension of the partnership with Sister Jeanne Devos and the JAAN Foundation, India

them entering employment or further education.

DEME supports the "**Ecodivers**", an organisation of enthusiastic people diving to clean up the North Sea. The divers focus on collecting lost fishing nets and fishing lines. The nets are recycled to make swim wear and socks.

In India DEME4Life continued the partnership with Sister Jeanne Devos and the "**JAAN Foundation**". The foundation promotes a safe childhood for child domestic workers and vulnerable girls through offering shelter, education and skills development. A special fundraising initiative was set up for the JAAN Foundation during the DEME open door and family day at the headquarters in September.

Since 2015 Dredging International Asia Pacific (DIAP) has been partnering with "**The Red Pencil**" in **Singapore**. The NGO offers both creative and clinical arts therapy services to various organisations including hospitals, family centres, shelters and schools, as well as the humanitarian missions outside of the city-state.

DEME4Life also supported the **Quynh Lap National Leprosy and Dermatology Hospital** in Vietnam and a **Center for Social Protection** in the Ba Vi district in the Vietnamese capital Hanoi.

In **Brazil** local employees from Dragabras, the Brazilian subsidiary of DEME, support the NGO "**Mais Caminhos**" to help underprivileged children from Rio de Janeiro's favelas. DEME also supports the Brazilian community in Belgium, offering funding and other help to the educational and sociocultural organisation "**Raiz Marim**".

ENERGY@DEME

The Energy@DEME programme underlines DEME's responsibility and commitment to the health and well-being of its employees. For more than 10 years DEME has been a pioneer in promoting and embedding a healthy and sports-minded culture into the entire company.

The Energy@DEME interactive health platform aims to involve all employees with a worldwide step challenge, giving nutrition advice and offering the possibility to participate in sports events. More than 4 million kilometres were synchronised to the Energy@DEME platform by the end of 2017.

The year was packed full of sporting events ranging from cycling and running in France to rowing in Dragon Boats in Belgium, to playing soccer in a tournament in Singapore.

The 2017 highlight was the sponsorship and participation at the "**Climbing for Life**" event in France, supporting the event's diabetes awareness campaign.

Over 170 DEME employees from across the globe joined on their bikes and on foot to cycle, run and walk in the Vosges mountains. For many employees, the event is a yearly highlight where they can meet and doing sports with their colleagues, with the number of participants increasing year over year.

For the second year in a row DEME selected a group of employees to become fitter and healthier with the "**DEME Heroes**" programme. Fourteen "DEME Heroes" took the challenge to embark on a life changing journey and got medical and nutritional coaching to climb the summits in the Vosges mountains. In September 2017, all the Heroes reached the summit during the Climbing for Life event in France.

Singapore NTUC Eco Run

At the legendary "**Dragon Boat race**" in Antwerp, Belgium, three DEME teams took part in the rowing event. One of the DEME teams won and took home the trophy. Plenty of running events took place across the globe, with many DEME employees taking part in runs like the **Antwerp 10 Miles** in Belgium, the **Wipro Chennai Marathon** in India, the **Standard Chartered Marathon** and **NTUC Eco Run** in Singapore and the **Singelloop** in the Netherlands.

10

For more than 10 years DEME has been a pioneer in promoting and embedding a healthy and sports-minded culture into the entire company.

Gérardmer - France Over 170 DEME employees participated at the "Climbing for Life" sports event

Chennai - India Wipro Chennai Marathon

Living the core values

ETHICS AND BUSINESS INTEGRITY

DEME's commitment to responsible business practices is absolute. The company's Code of Ethics and Business Integrity puts DEME's core values into practice and provides guidance to all employees worldwide about making sound ethical business decisions and to inspire dialogues about ethics and compliance issues.

The principles of DEME's 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 DEME is doing business with to respect and act according to these core values and ethical principles.

The 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 and accounting standards and records.

PROTECTING PEOPLE

DEME is committed to providing a workplace where all employees are treated fairly and are free of discrimination. The company values the diverse backgrounds and talents of employees.

As an international player DEME ensures everyone has equal access to opportunities, using the same criteria for employment and promotion for the company's worldwide activities.

There is no place for compromises on health and safety. To maintain DEME's carefully built up and valuable reputation in this respect, compliance with our quality processes and safety requirements is key for every individual working directly or indirectly for DEME. The company's Health and Safety Policy further guides employees to maintain 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 DEME's assets responsibly and protect them from theft, loss and misuse. This includes both physical assets and intellectual property.

ANTI-BRIBERY AND ANTI-CORRUPTION

DEME's 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 zero tolerance for any breach of the policy by employees or anyone acting on the company's behalf.

ANTITRUST AND COMPETITION

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

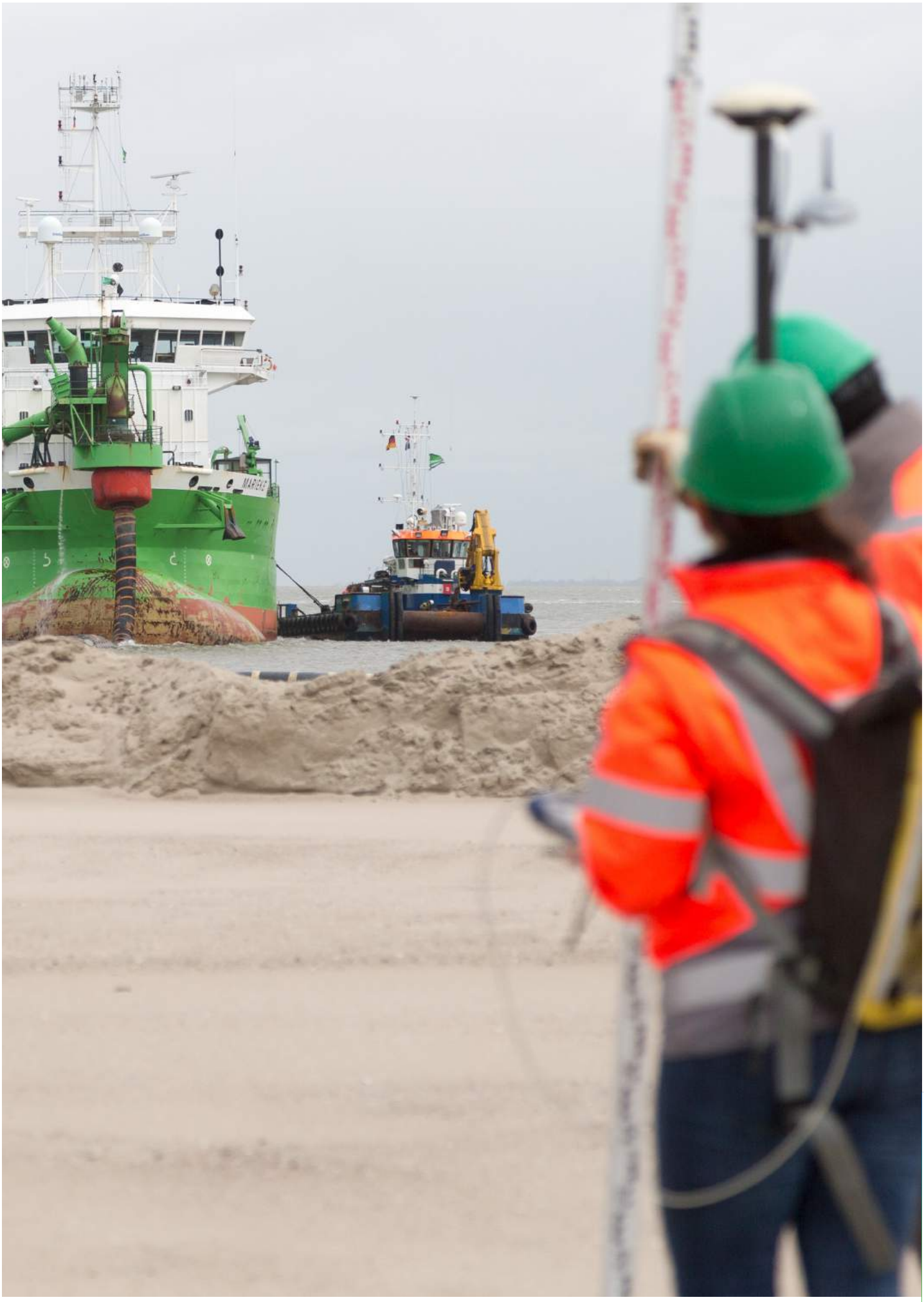
INTERNATIONAL TRADE LAWS

The company is committed to comply with the applicable laws and regulations in the countries where it operates. Also, DEME ensures compliance with applicable national and international sanction regulations.

ACCOUNTING STANDARDS AND RECORDS

In order to make sure there is correct information regarding financial records, employees have the responsibility that data or information provided is complete, reliable and accurate. DEME works according to accounting standards and procedures that are key in the obligation to provide full and transparent disclosure to stakeholders and regulatory authorities.

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



SUSTAINABLE DEVELOPMENT GOALS

- As an international player DEME employs local people and ensures everyone has equal access to opportunities.
- DEME is involved in many infrastructure projects that are pillars to further enhance economic growth. Examples include major port development and land reclamation projects in Ghana, India, Nigeria, Sierra Leone and Singapore.
- Where the sea has taken land through years of coastal erosion, DEME reclaims land for the benefit of the future development of countries and coastal communities.
- DEME provides its coastal protection expertise, addressing rising sea levels in countries like Benin and the Maldives.

DREDGING SOLUTIONS

Dredging and land reclamation are more than just DEME's core activities. They are at the very foundation of the company. DEME is involved in huge, complex dredging and land reclamation projects worldwide, offering customers cutting-edge solutions. Over the past decades, DEME has executed major marine engineering infrastructure works such as the development of new ports, waterways, airports, artificial islands, residential and recreational areas, industrial areas, roads, bridges etc. on all continents.

Benelux

BELGIUM

ANTWERP, GHENT AND BELGIAN COAST

In Belgium DEME continued 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 'Pallieter' 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. Maintenance dredging also continued on North Sea access channels and the marinas of Ostend, Zeebruges and Blankenberge.

Early 2017 a new four-year contract has been awarded for the maintenance dredging and treatment of contaminated sediments on the canal Ghent-Terneuzen. The sediments are treated by DEME's specialist environmental company DEC in its specialist soil and sediment recycling centres.

BREDENE AND NIEUWPOORT

On the beach of the coastal town of Bredene tonnes of sand were washed away in January 2017 by a severe winter storm. DEME executed sand suppletion works with TSHD 'Breughel' to restore the beach before the tourist season kicked off.

In August 2017 DEME was awarded a contract for beach nourishment works in Nieuwpoort. DEME's newest dual fuel hopper 'Minerva' was deployed on the project in October 2017.

RENTEL OFFSHORE WIND FARM

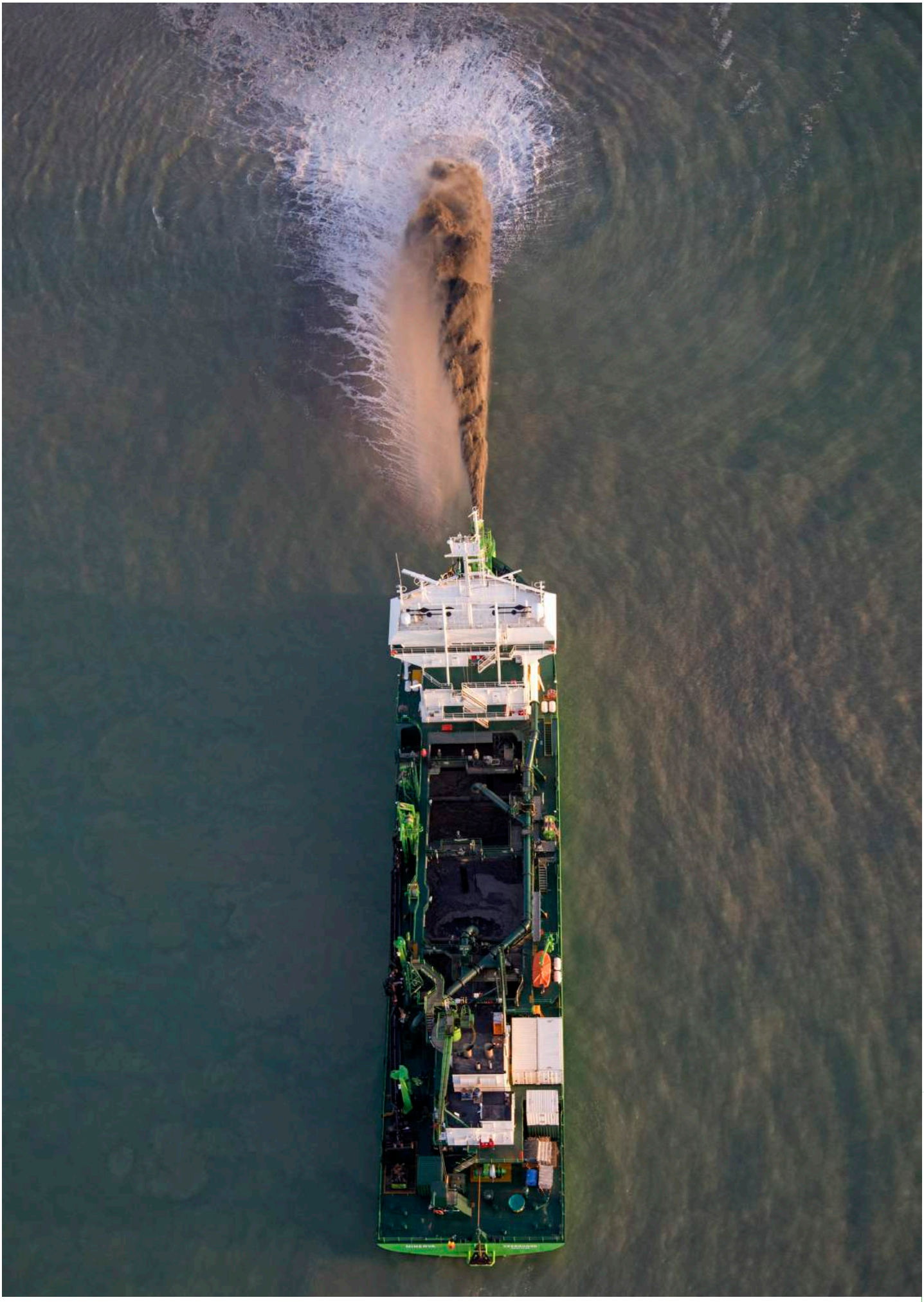
With TSHDs 'Lange Wapper', 'Uilenspiegel' and 'Minerva', DEME executed dredging, trenching and backfilling works for the 309 MW Rentel offshore wind farm, located in the Belgian North Sea.

MODULAR OFFSHORE GRID

In August 2017 DEME has secured the contract from the Belgian transmission system operator Elia for the submarine power cable installation for the Modular Offshore Grid (MOG) in the North Sea. The installation scope includes the supply, installation and maintenance of the submarine power cables. For seabed preparation, DEME will deploy its dual fuel hoppers 'Minerva' and 'Scheldt River', the newest additions to the fleet and the world's first LNG powered dredgers. Cables will be installed by multipurpose vessel 'Living Stone', entering the fleet in 2018 and operated by Tideway.

Dual fuel

DEME's newest dual fuel trailing suction hopper dredgers 'Minerva' and 'Scheldt River' were successfully deployed on their first assignments in the Belgian part of the North Sea.



Bredene - Belgium Sand suppletion works


G76032
D8T
Bergerat
Monnoyeur
CAT
CAT

Rotterdam - The Netherlands TSHD 'Breughel' dredging near the new quay wall at the Offshore Terminal Rotterdam

The Netherlands Dredging and stone dumping works for the weir complex on the rivers Nederrijn and Lek

NETHERLANDS

RIJNLANDROUTE, NEW LOCK TERNEUZEN, BLANKENBURG TUNNEL

With its subsidiary DEME Infra Marine Contractors (DIMCO), DEME secured three major infrastructure contracts in the Netherlands: the RijnlandRoute, the New Lock Terneuzen and the Blankenburg Tunnel. These challenging projects are an opportunity to fully exploit the diversified capabilities and synergies within the DEME Group. Besides the infra marine works, the projects include a major dredging and ground works component. Dredging International started preparatory ground works for the RijnlandRoute in 2017.

OFFSHORE TERMINAL ROTTERDAM

Both Dredging International and de Vries & van de Wiel executed the deepening works in front of the newly built Offshore Terminal Rotterdam quay wall. Works ran smoothly and finished in mid-2017.

KOOYHAVEN

De Vries & van de Wiel, together with a Dutch partner, worked on the development of the Kooyhaven at the port of Den Helder during 2017. Located on the Noordhollandsch Canal, the industrial estate is closely linked to the North Sea. Kooyhaven offers space for businesses within the energy market's supply chain that are also reliant on the port and water-based transport. Works included a 660 m quay wall and a secondary dyke of 1.4 km. The public quayside became operational in December 2016 and the final works wrapped up at the end of 2017.

RENOVATION OF THREE WEIR COMPLEXES – RIVERS NEDERRIJN AND LEK

De Vries & van de Wiel is working alongside its sister company, DIMCO, in a major weir renovation project involving three weir complexes on the rivers Nederrijn and Lek. In a consortium, DIMCO and Siemens Netherlands are carrying out this project on behalf of Rijkswaterstaat, which is responsible for the management and maintenance of Dutch waterways. De Vries & van de Wiel will carry out the dredging and do the stone dumping works for DIMCO. Works started in February 2017 and are due to be completed in 2018.

DEEPENING OF THE RIVER MAAS

In another Rijkswaterstaat project, de Vries & van de Wiel is working on a project to deepen and widen the River Maas near Venlo, in the south of the Netherlands. Due to be completed in 2019, this will enable the next generation of barges to transit the river more easily. The whole government project will include the entire stretch between Maastricht and Rotterdam. De Vries & van de Wiel will be responsible for the dredging of a section of 7 km of this stretch, which represents some 150,000 m^3 of material.

Additionally, the company has to carefully monitor two bridges (a rail and road bridge) on the river and also detect and remove bombs and munitions from World War II. Works started in 2017 and are set to run until early 2018.

"The RijnlandRoute near Leiden will significantly increase the mobility in the region. This multidisciplinary project consists of open (1 km) and drilled (2.5 km) tunnel sections, an aqueduct, flyovers and multiple bridges. The project is an opportunity for DEME and DIMCO to demonstrate their experience and expertise."

BRECHT VERBRUGGE

PROJECT MANAGER

RIVERS IN THE WEST OF THE NETHERLANDS

De Vries & van de Wiel is 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, which got underway in 2016.

DYKE REINFORCEMENT BETWEEN GORINCHEM-WAARDENBURG (GOWA) AND THE FIRST TIME AN 'ALLIANCE' CONTRACT IN THIS FORM IS USED IN THE NETHERLANDS

De Vries & van de Wiel, together with its partners, has 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 where the alliance will work together from the very beginning – from introducing the initial design ideas to the final execution of the project.

The Rivierenland Water Board (Waterschap Rivierenland) awarded the contract to the 'Waalensemble' consortium (de Vries & van de Wiel, Heijmans, GMB). The new form of cooperation means that the surveys, design, planning and the realisation of the dyke reinforcement itself are included, with the consortium working together with the client throughout.

Additionally, when the consortium entered the tendering process, it was not aware of the full scope or value of the contract, and was judged purely on its competences. By entering into the new alliance - named 'Graaf Reinald' - the Rivierenland Water Board wants to fully utilise the contractor's knowledge when designing the new dyke.

The 23-km dyke reinforcement is part of the Netherlands Flood Protection Programme. The primary flood defences in the Netherlands are periodically tested against statutory safety standards and a 2011 review showed that parts of the dyke no longer met the standards.

The alliance partners are working on the new design, which is expected to be completed by the autumn of 2018. The actual dyke reinforcement is due for completion in mid-2023.

INTRODUCING 'DOT.PRO'

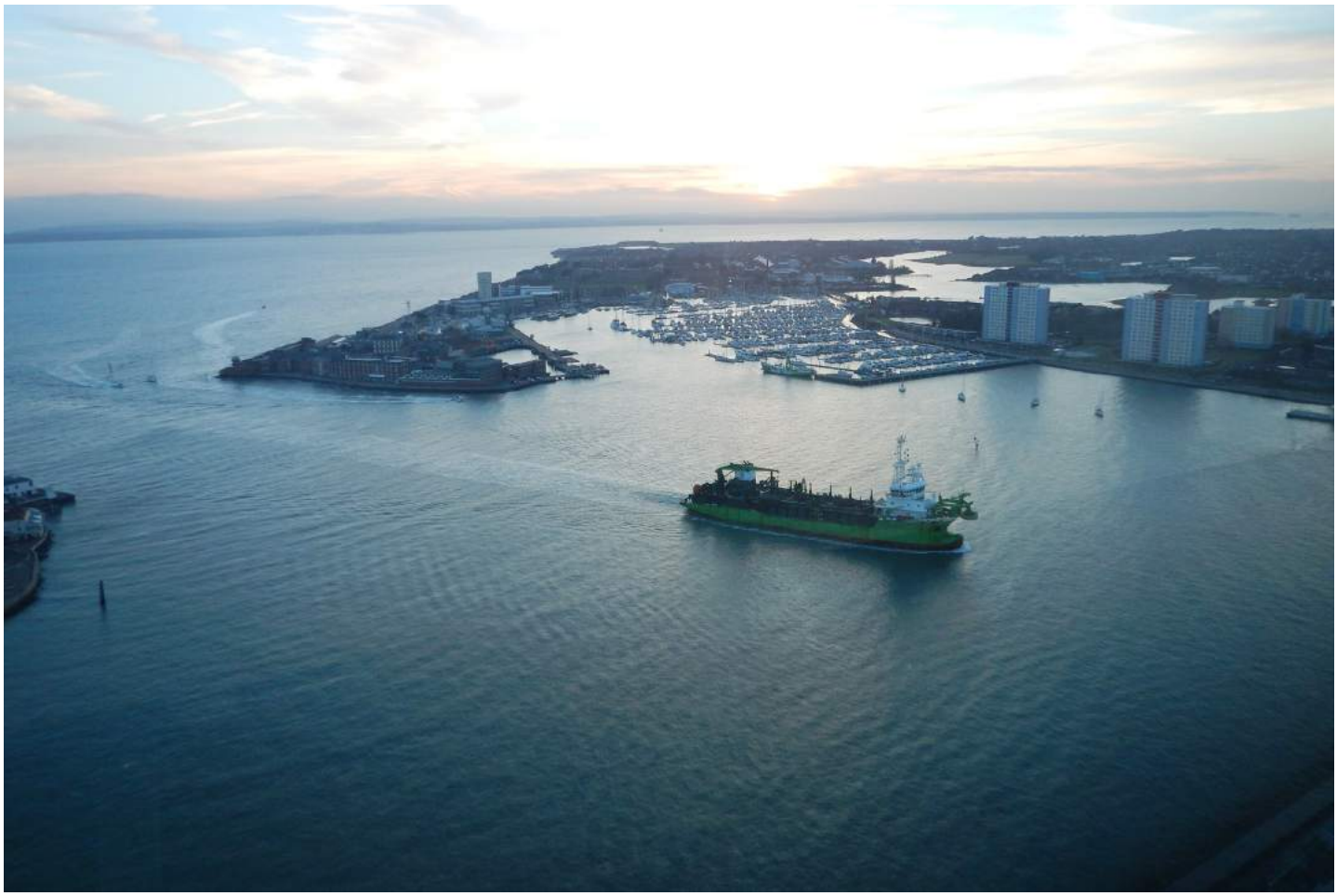
The Dot.PRO project has led the company to develop a special software platform, which will provide more insight into how sedimentation builds up in the river. By monitoring the river and feeding this data into the platform, and using DEME's and the client's (Rijkswaterstaat) own Big Data resources a vast amount of information is being compiled. This can be used to improve river inspections and to make more accurate forecasts etc. The client knows in advance when new dredging works need to take place, which generates cost savings.

Proactive water management

DEME is excited to develop such a platform, which can be used on its projects all over the world eventually. The company believes this really creates additional value for its clients as Dot.PRO assists them with their water management programmes.

The Netherlands Hopper dredger 'Zeeland' maintaining rivers in the west of the Netherlands

Able Seaton Port - UK Deepening of the access channel at Able Seaton Port



Portsmouth - UK Capital dredging with TSHD 'Reynaert'

North Europe

UK

NewWaves Solutions is a DEME Group subsidiary active throughout the UK & Ireland. By combining the strengths of the Group's operating companies (GeoSea, EverSea, Tideway, DEC, DBM, DBE, DIMCO) under one roof, NewWaves Solutions is able to provide a single point of contact for UK-based projects. A number of new contracts have been secured in 2017.

DAWLISH WARREN BEACH

As part of the Dawlish Warren Beach Management Scheme, NewWaves Solutions executed dredging and beach nourishment works in June and July 2017. The scheme is aimed to reduce the risk of flooding and erosion. About 325,000 m^3 of sand has been reclaimed.

PORTSMOUTH

From November 2016 to March 2017 TSHD 'Reynaert' was deployed for capital dredging on the approach channel and inner harbour at Portsmouth. The deepening and widening works give the Queen Elizabeth Class of aircraft carriers access to the naval base.

ABLE SEATON PORT

NewWaves Solutions was awarded the contract for the deepening of the access channel at Able Seaton Port. The port is a major hub for the offshore wind industry and will be used as the load out port by offshore installation vessel 'Innovation' for the installation works at the Hornsea One offshore wind farm. Works were carried out in November 2017 by TSHDs 'Reynaert' and 'Scheldt River', and backhoe dredger 'Peter the Great'.

DUBLIN PORT

In September 2017 a contract was secured for capital dredging works on the access channel to the port of Dublin. The first dredging campaign was performed with dual fuel TSHD 'Minerva', one of DEME's newest vessels that joined the fleet in 2017. TSHD 'Reynaert' was also deployed on the project.

HARWICH AND FELIXSTOWE

The maintenance dredging contract for the ports of Harwich, Felixstowe and their navigation channels has been awarded to NewWaves solutions in October 2017. Several dredging campaigns will be carried out between January and June 2018.

NUSTAR

NewWaves Solutions carried out dredging works at the NuStar jetty on the River Thames.

Cuxhaven - Germany TSHD 'Marieke' reclaims land in Cuxhaven, while TSHD 'Breughel' executes maintenance dredging works on the Elbe

GERMANY

In 2018 DEME's German subsidiary Nordsee Nassbagger- und Tiefbau (Nordsee) celebrates its 50th anniversary. Since its foundation Nordsee has embarked on a steady growth course which is reflected in the diverse dredging and marine engineering projects carried out across the country. From its head office in Bremen, Nordsee offers local expertise and innovative solutions, often leveraging strong regional partnerships.

ELBE AND WESER

Nordsee has acquired the maintenance dredging contract on the River Elbe. The contract has been awarded to a joint venture, including Nordsee, for a period of two years. DEME maintains the whole 116 km long fairway of the Elbe between the North Sea and Hamburg. TSHD 'Breughel' started the works, and TSHD 'Marieke' was deployed on the Elbe after having finalised the reclamation works for the port expansion in Cuxhaven.

In June 2017 Nordsee also secured the contract for water injection maintenance dredging on the Elbe in Northern Germany.

Nordsee is also executing the 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, DEME is now maintaining the fairways to the two biggest container ports in Germany.

CUXHAVEN

In October 2017 Nordsee successfully completed the dredging and land reclamation works 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. An area of 90,000 m² was filled with sand by the TSHD 'Marieke'. Nordsee also dredged the waterway in front of the new berth. By working in a strong partnership with local contractors, Nordsee was able to deliver the best possible solution to the client, Niedersachsen Ports, for this challenging project.

Brest - France TSHD 'Lange Wapper' in the port of Brest

FRANCE

BOULOGNE-SUR-MER AND CALAIS

In February 2017, DEME's French subsidiary Société de Dragage International (SDI) secured the contract for the maintenance dredging at the ports of Boulogne-sur-Mer and Calais. TSHD 'Charlemagne' was deployed on the first dredging campaign in May 2017. In November the second campaign was completed with TSHD 'Reynaert'.

BORDEAUX

Also in February 2017 SDI was awarded the contract for the maintenance dredging on the Gironde, where water injection dredger 'Dhamra' was deployed on two campaigns.

GRAVELINES

In July 2017 SDI was granted the contract for the maintenance dredging on the access channel to the port of Gravelines.

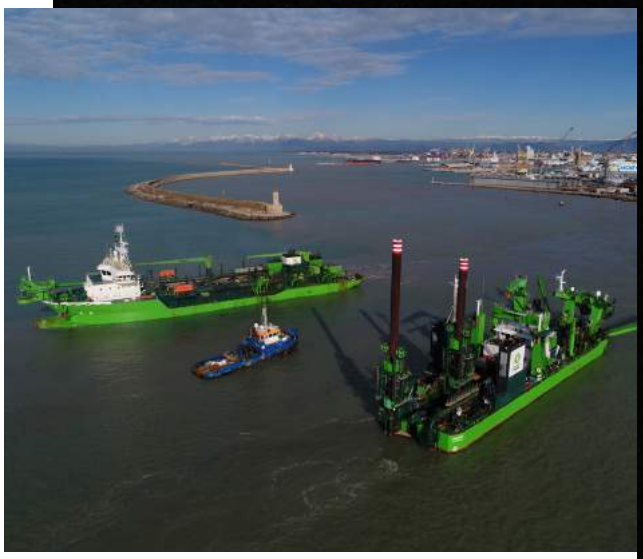
SEINE

In early 2017 SDI completed the deepening works on the Seine in the Courval-Duclair section, allowing larger vessels to access the Port of Rouen.

BREST

The port of Brest embarked on an upgrade programme to prepare the port facilities for the growing offshore renewables industry. As part of a joint venture, SDI is involved in the construction of a 380 m quay wall and a 100 m wide platform for the new heavy loads terminal. TSHD 'Lange Wapper' was deployed in Brest from June to August 2017 to install a gravel layer for the quay wall and platform.

Mediterranean



Livorno - Italy
TSHD 'Breughel' and CSD 'Amazone' dredging in the port of Livorno

ITALY

LIVORNO

Sidra, DEME's subsidiary in Italy, was again busy in the port of Livorno. Work on the widening of the entrance channel was completed at the end of the year. The TSHD 'Breughel' and the CSD 'Amazone' were deployed on the project, which involved a substantial amount of hard rock dredging.

NAPLES

Additionally in Italy, Sidra started with a maintenance dredging project in the Port of Naples, representing 1.3 million m^3. This project, commissioned by the Port Authority of Naples, started at the end of 2017 and will run into 2018.

Livorno - Italy Dredging works by night in the port of Livorno

EGYPT

ALEXANDRIA, RAS AL TEEN

Following on from several successful projects for the Egyptian Navy in Alexandria, DEME was awarded a contract to dredge the access channel and new quay wall for the navy base of Alexandria. This represented 1.3 million m^3 and was completed in the third quarter under challenging time constraints. Two dredgers, the TSHD 'Breughel' and CSD 'Al Jarraf' were involved in the dredging operations.

BURULLUS POWER PLANT

DEME was awarded a project for the startup of a Combined Cycle Power Project in Burullus in 2016, which was in full swing in 2017. The scope included more than 600,000 m^3 of dredging and backfilling, as well as pipe laying.

ALGERIA

MOSTAGANEM

DEME was awarded a contract to dredge a trench and carry out the backfilling for the water intake of a new power plant, close to the port of Mostaganem. Dredging works are due to start in April 2018.

SPAIN

BARCELONA

DEME carried out a contract for dredging works in the Port of Barcelona for the construction of a new quay wall.

TURKEY

THE DARDANELLES STRAITS SUSPENSION BRIDGE

DEME was awarded a prestigious contract to dredge the foundation pits for the new Canakkale Bridge, which will be the largest suspension bridge in the world. Work got underway in January 2018.

LEBANON

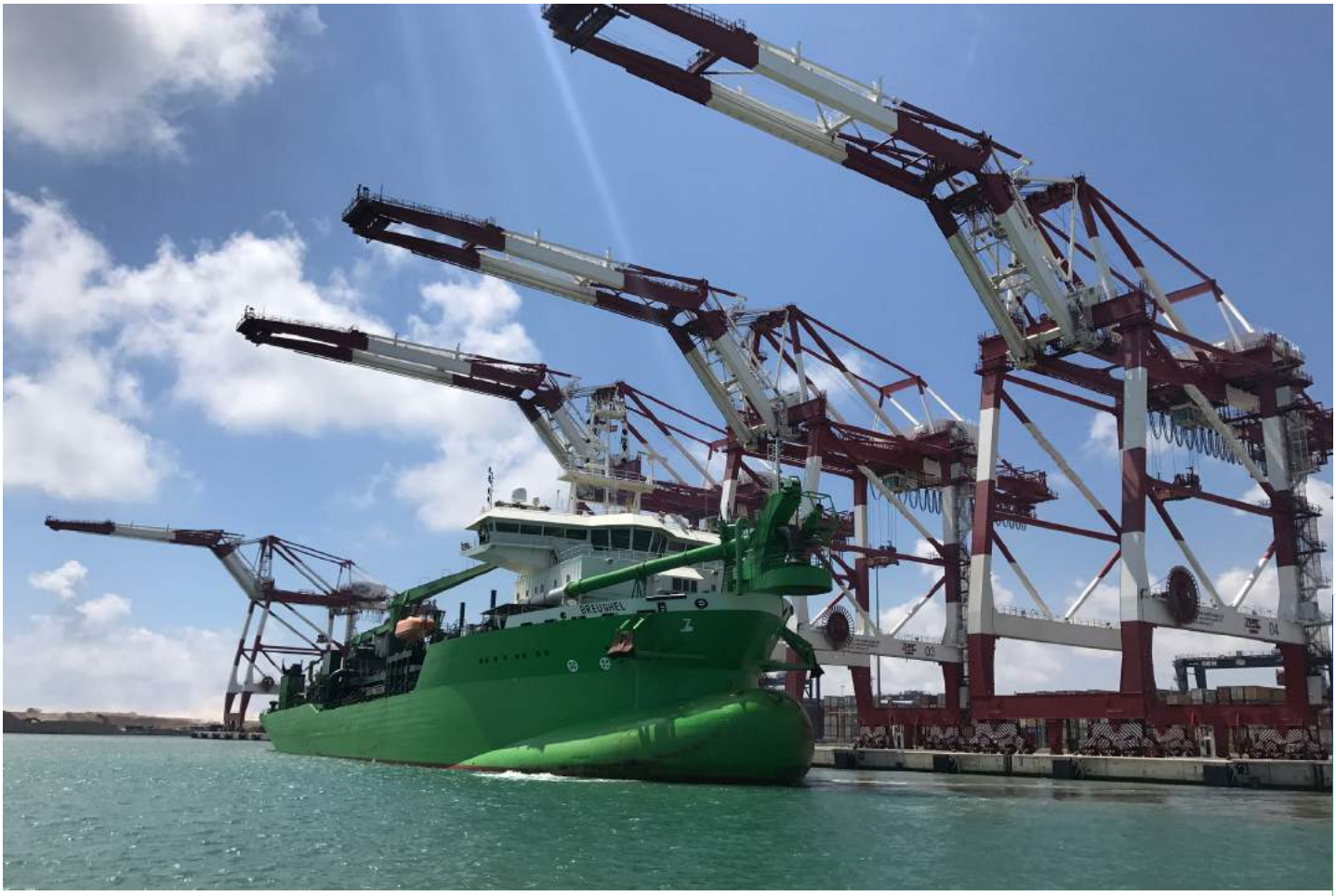
BEIRUT

A trench for the foundation of a new breakwater was dredged in the Port of Beirut.

3,869

3,869 m is the total length of the Canakkele Bridge, crossing the Turkish Straits at the Dardanelles between the Gallipoli and Biga peninsulas.

Livorno- Italy Dredging at the port of Livorno



Barcelona - Spain TSHD 'Breughel' dredging in the Port of Barcelona

Eastern Europe

While Russia has been relatively quiet given the slump in the oil prices, the Black Sea region has seen more activity with Ukraine, Georgia, Romania and Turkey all showing signs of an improvement. On the back of this, many ports are being further developed, leaving DEME with some optimism about future prospects in the medium term.

Yuzhny - Ukraine
TSHD 'Breughel' in the port of Yuzhny

UKRAINE

DEME had its first ever project in Ukraine when it carried out maintenance works for the Port of Yuzhny. Completed in November 2017, and deploying the trailing suction hopper dredger 'Breughel', the project involved dredging around 500,000 m^3 and was performed to the full satisfaction of the client.

Yuzhny - Ukraine TSHD 'Breughel' executes maintenance dredging works in the port of Yuzhny

Asia and Oceania

SINGAPORE

Dredging International Asia Pacific Pte Ltd (DIAP) has continued a high level of activity in Singapore at the Tuas Terminal Phase 1 and Jurong Island Westward Extension Projects, and has obtained a new contract award for the Ayer Merbau Reclamation, Phase 2.

AYER MERBAU RECLAMATION PHASE 2

In August 2017, DIAP has been awarded a major Design and Build contract for 35 ha of land reclamation that will further extend Jurong Island, in a contract award from JTC, the Singapore Government's lead agency for the development of industrial infrastructure. DIAP, in a joint venture with Starhigh Asia Pacific Pte Ltd, has been selected to deliver the design of the works, the hydraulic study of the reclamation channel, land side site clearance, bund construction with shore protection, dredging of the sandkey, 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 works on this project will be executed according to the provisions of the environmental assessment and the requirements of the environmental monitoring and management programme, and the navigation safety requirements in force in the area, which sees busy marine traffic.

The Ayer Merbau Phase 2 reclamation is another extension to the acreage of Jurong Island, one of the world's largest oil refining and petrochemical hubs and a long-standing keystone of Singapore's national development.

The works kicked off in October 2017 with a groundbreaking ceremony at the site.

Singapore Groundbreaking ceremony at Ayer Merbau Reclamation Phase 2

Singapore The TTP1 container terminal is clearly taking shape

TUAS TERMINAL PHASE 1

In October 2017 the halfway mark was reached at the Tuas Terminal Phase 1 (TTP1) Project that DIAP is executing in a joint venture with Daelim Industrial of South Korea on behalf of Singapore's Maritime and Ports Authority (MPA).

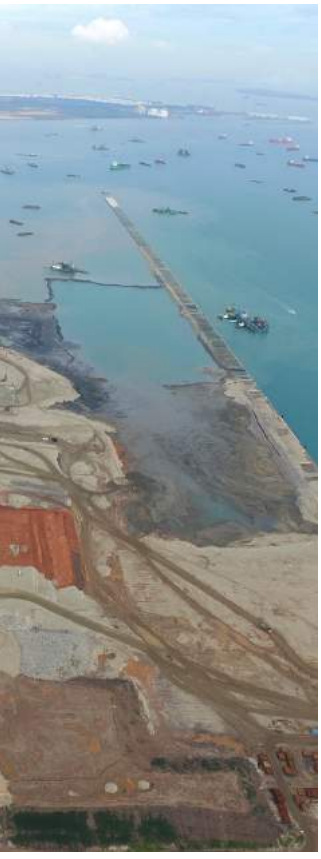
The contours of the future Tuas Megaport container terminal are clearly taking shape, with 143 of 222 caissons placed in December 2017 to form the future quay wall, and 33.7 million m^3 of the platform reclaimed, out of a total of 70 million m^3. The gigantic scale of the project is reflected by the large amount of specialised equipment working on the reclamation, at the caisson train and at the dredging works.

The works are executed according to strict environmental requirements and with continuous environmental supervision.

Tuas Terminal Phase 1 is a major reference for DEME in Singapore and the wider region, as smart methods and advanced equipment are deployed in very challenging conditions.

JURONG ISLAND WESTWARD EXTENSION

Works at the Jurong Island Westward Extension (JIWE) project are progressing according to schedule and are expected to be completed in 2018. 38 million m^3 of new land is being reclaimed at Jurong Island, Singapore's dedicated petro-chemical hub. DIAP has been involved in all stages of the reclamation projects that have, since the early 1990s, led to the creation of Jurong Island from seven smaller islands. JIWE in particular is a challenging and complex project where DIAP is showcasing its expertise in soft-soil reclamations and the reuse of dredged materials for the reclamation works. The use of soft dredged materials for the reclamation fill requires extensive soil improvement techniques in order for the finished product to meet compaction, settlement and load bearing criteria.



"Taking up my position on the Jurong Island Westward Extension project was initially quite a challenge. With the support of my colleagues, it has been a challenge that I have enjoyed. Now we are also executing the Ayer Merbau Phase 2 project. I look forward to contributing to the successful completion of such prestigious projects in one of the world's leading locations for land reclamation."

EUAN MORAN

CONTRACTS MANAGER
DIAP, SINGAPORE

Tuas Terminal Phase 1 - Singapore

Innovative solutions for sustainable port development

- Dredging International Asia Pacific (DIAP) working in a joint venture with Daelim Industrial of South Korea
- Development of a container terminal of 20 million TEU per annum, built entirely on reclaimed land
- Scheduled for completion in 2020

PROJECT SCOPE

- **DIAP**
  - Dredging and land reclamation
  - Caisson foundation
  - Marine construction
- **DAELIM**
  - Caisson construction yard
  - Caisson fabrication, transport & installation
  - Temporary access road

FACTS & FIGURES

- 294 ha of land to be reclaimed
- Construction of an 8.6 km quay wall, including 222 caissons
- 160 vessels deployed
- More than 2,500 people working on the project

15,000

EACH CAISSON

- weighs 15,000 tonnes
- 28 m high = the height of a 10 storey building

28

FOCUS

SUSTAINABLE SOLUTIONS

- Maximised reuse of dredged materials, decreasing sand transportation and reducing the overall carbon footprint.
- Advanced soil improvement techniques used on the recycled dredged materials, meeting the highest quality standards.
- Optimised design of the terminal with a sand cap of 4 m instead of 6 m, resulting in a massive reduction of the sand requirement.
- Deployment of the fully automated, underwater 3D-printer 'Temarock' for the rock foundations decreases the number of vessels needed for this operation, leading to less fuel consumption.

200 m^3

- The size of the bucket reduces the number of grab dredgers needed.
- The huge capacity of 'Gosho's grab bucket is the equivalent of 20 truckloads of sand.

- The enormous power generated by the hybrid systems in the grab dredgers is stored in batteries and reused for the next dredging cycle.

Papua New Guinea The Lower Ok Tedi River project celebrated its 20th year of operations

PAPUA NEW GUINEA

LOWER OK TEDI RIVER

Not only is Lower Ok Tedi in Papua New Guinea the most remote project DEME is involved in, it is also one of the most long-standing: the project celebrated its 20th year of operations in 2017. The contract includes the removal of potentially polluted sediments from the Lower Ok Tedi River system. It all started with the first mobilisation of the cutter suction dredger 'Cap Martin' back in 1997. Now, more than two decades later, the project and the 'Cap Martin' are still going strong for the environmental rehabilitation of the Ok Tedi basin.

The location of the project undoubtedly poses one of the biggest challenges. The project is situated in a very remote area with seismic activity, heavy rainfall and steep terrain slopes, which results in many risks that have to be duly addressed – such as the present geotechnical instability and the high risk of landslides in the region – and a range of mitigation measures have to be put in place.
The current contract runs until at least 2020.

Africa

Over the years DEME has developed significant expertise across Africa, where several major dredging and land reclamation projects are currently being executed. In 2017 DEME has been active in nine different countries across the African continent.

SIERRA LEONE

FREETOWN TERMINAL

DEME further reinforced its footprint on the African continent with a first project in Sierra Leone. A consortium including DEME is working on the extension of the **Freetown Terminal** in Sierra Leone. The Freetown Terminal, operated by the French group Bolloré Transport & Logistics, is undergoing an expansion programme with the construction of a new 270 m quay wall to accommodate larger cargo ships.

The scope of work for DEME includes soil improvement, reclamation and compaction works, as well as the deepening of the existing and future container berths. TSHD 'Breydel' has been deployed on the project in 2017 for the land reclamation. In 2018 works will continue with soil compaction.

GHANA

TEMA PORT

In April 2017, DEME has been awarded a contract in Ghana for the Tema Port expansion project. Ghana's main seaport, operated by Meridian Port Services (MPS), is gearing up to accommodate some of the world's largest container ships and wants to increase cargo handling services and capacity. The project included dredging and land reclamation of 3 million m³. Works started in May with TSHD 'Congo River' and were successfully completed ahead of schedule in July 2017.

KPONE POWER PLANT

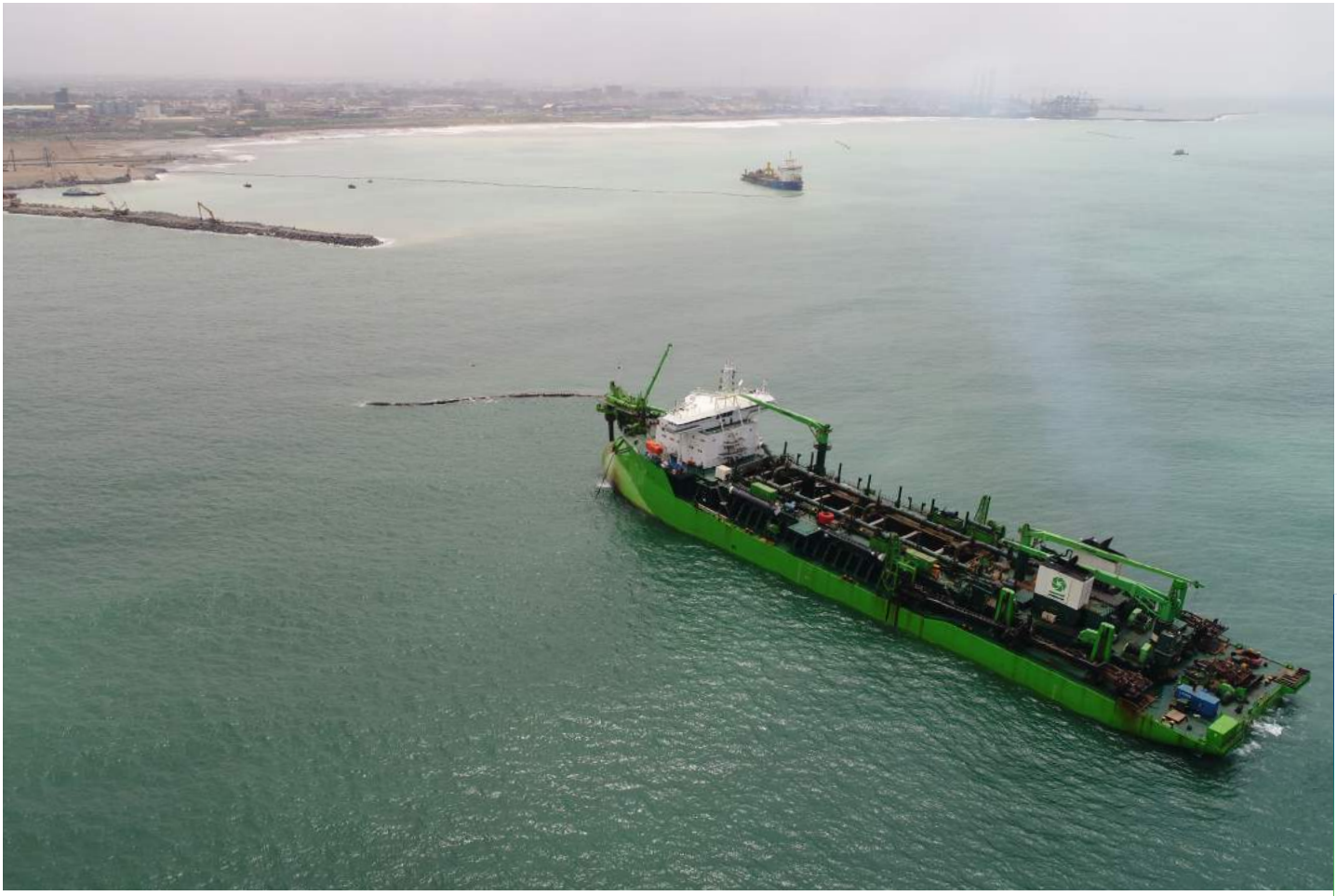
Dredging works were executed with TSHD 'Orwell' for the water inlet of the Kpone Power Plant in Ghana. GeoSea's jack-up platform 'Vagant' was deployed to install the tube for the water inlet.

"DEME developed an innovative method to fill the cofferdam structure at the Freeport project in Sierra Leone. With a revolutionary rainbowing system from the side of the vessel we ensured continuous progress and success at this challenging project."

Giuseppe Stefani

PROJECT MANAGER

Freetown - Sierra Leone TSHD 'Breydel' at Freetown Terminal Port expansion



Tema Port - Ghana Tema Port expansion with TSHD 'Congo River'

Lagos - Nigeria CSD 'Amazone' and TSHD 'Breydel' at the Lagos Deep Offshore Logistics Base

NIGERIA

BONNY AND ONNE

DEME continued maintenance dredging works with the TSHDs 'Breydel' and 'Orwell' to ensure the channel to the LNG terminal in Bonny and the ports of Onne and Port Harcourt remain accessible. Works are carried out under the long-term PPP agreement with the Bonny Channel Company, a joint venture with the Nigerian Ports Authority.

EKO ATLANTIC

After the successful completion of phase 3 of land reclamation works at Eko Atlantic, DEME is set to execute phase 4 when works resume on the site. Eko Atlantic is a major real estate development in Nigeria, requiring reclamation and sand winning of 100 million m^3. The ultimate goal is to create 9 km^2 of prime land.

LAGOS DEEP OFFSHORE LOGISTICS BASE

In April 2017 DEME completed the capital dredging works with CSD 'Amazone' at the Lagos Deep Offshore Logistics Base (LADOL). LADOL and Samsung Heavy Industries are developing Africa's largest vessel fabrication and integration facility. The scope of work for DEME included quay wall construction, dredging of the berth pocket and the access channel to the quay. Also, TSHD 'Orwell' performed a maintenance dredging campaign on the access channel.

MAIYEGUN WATERFRONT

With TSHD 'Breydel' DEME successfully executed land reclamation activities of approximately 600,000 m^3 to raise the level of an existing beach. Maiyegun Waterfront will include new housing units, a commercial hub and leisure facilities.

ELEGUSHI ISLAND

At the end of 2017 dredging and land reclamation works started on Elegushi Island in the Lagos Lagoon and will continue in 2018. CSD 'Rubens' is deployed on the first phase of the project.

Soyo - Angola Maintenance dredging at Port of Soyo

GUINEA

As part of a long-term contract TSHD 'Breydel' has executed maintenance dredging works in the port of **Conakry**.

In early 2017 dredging works were completed at the port of **Kamsar** as part of the expansion of the mineral wharf owned by Compagnie des Bauxites de Guinée. In the same port TSHD 'Orwell' carried out a maintenance dredging campaign at the Kamsar Container Facilities for the Guinea Alumina Corporation.

IVORY COAST

In March 2017 maintenance dredging was carried out in the **Port of Abidjan** by the TSHD 'Breydel'.

ANGOLA

A five-year maintenance dredging contract has been awarded by Angola LNG to a joint venture including DEME to maintain a safe navigation to the terminal in the **Port of Soyo**. Works started in June 2017.

In 2017 TSHD 'Breydel' has been continuously working in Africa, combining operations in five different countries.

DR CONGO

In early 2017 the TSHD 'Orwell' carried out a maintenance dredging campaign on the **Congo River** to guarantee a 26 feet draught and safe access to the ports of **Boma** and **Matadi**. The campaign was executed under the 10-year Public Private Partnership (PPP) with La Congolaise des Voies Maritimes. Besides maintenance dredging the PPP also includes a large training component for local crew and staff.

BENIN

In Benin DEME was awarded a contract for coastal protection works at the **Cotonou** shoreline. Works include beach nourishment with a total volume of 1.5 million m^3 as well as revetment works and groyne construction. The project started in September 2017 and will continue for the whole of 2018.

LIBERIA

In 2017 DEME also returned to Liberia for maintenance dredging works in the **Freeport of Monrovia**. The contract was awarded by Liberia's National Ports Authority. The maintenance campaign was concluded successfully with TSHD 'Breydel'.

Cotonou - Benin Coastal protection works

Middle East

QATAR

HAMAD PORT

On September 5, 2017 Hamad Port, one of the largest ports in the Middle East and the world's largest greenfield port, was officially inaugurated.

The Middle East Dredging Company (MEDCO), DEME's subsidiary in Qatar, had worked on the project for nearly three years. The company carried out dredging and land reclamation works for this new port, which is one of the biggest projects undertaken so far by DEME in the Middle East. The scope of work included dredging a 20 km long access channel and a Naval Base basin, the land reclamation with dredged materials for an area of approximately 4.5 square km for the construction of the Naval Base, as well as for the new Qatar Economic Zone, the construction of breakwaters and rock revetment works.

Hamad Port is situated around 60 km south of the Old Doha Port, which is in the city centre. MEDCO faced a major challenge of an extremely tight schedule as the Old Doha Port had become too small and congested to handle the increasing marine traffic in the years leading up to the 2022 FIFA World Cup. Thanks to MEDCO's swift execution, the first commercial traffic could actually start months ahead of schedule, with the first container ships already arriving in December 2015.

The project represented the dredging and excavation of some 45 million m^3, which was mainly hard rock. At peak times about 1,600 people were employed on the project. Protection of the environment was also a top priority on the site, where sea grass, corals and mangrove were safely relocated.

Hamad Port will be able to handle 7.5 million TEU annually.

OLD DOHA PORT REDEVELOPMENT

Building on a strong track record in the Middle East and the successful early delivery of Hamad Port, MEDCO was awarded the contract for the Old Doha Port Redevelopment project in August 2017.

As Hamad Port became fully operational all the traffic from the Old Doha Port transferred to the new port and the Old Port is now being turned into a cruise terminal, able to handle the largest and latest generation of vessels of 350 m plus.

In a joint venture, MEDCO will execute the dredging works for the widening and realigning of a 13.5 km access channel, as well as dredging a 700 m turning circle. The JV will design the channel, which has to widened from 160 m up to 240 m in some sections.

Additionally, MEDCO is responsible for the design and construction of two mooring dolphins so the terminal can moor two cruise liners along the quay wall at the same time. Following months of planning and preparation, work will start in early 2018 at the site and it is expected to run until March 2019. As well as the cruise terminal, hotels and real estate will be developed at the old port.

UNITED ARAB EMIRATES

The vast La Mer Jumeirah Open Beach project in Dubai was officially handed over in 2017. DEME reclaimed an area of 2.9 million m^2, which was mainly located on three peninsulas along the Jumeirah beachfront.

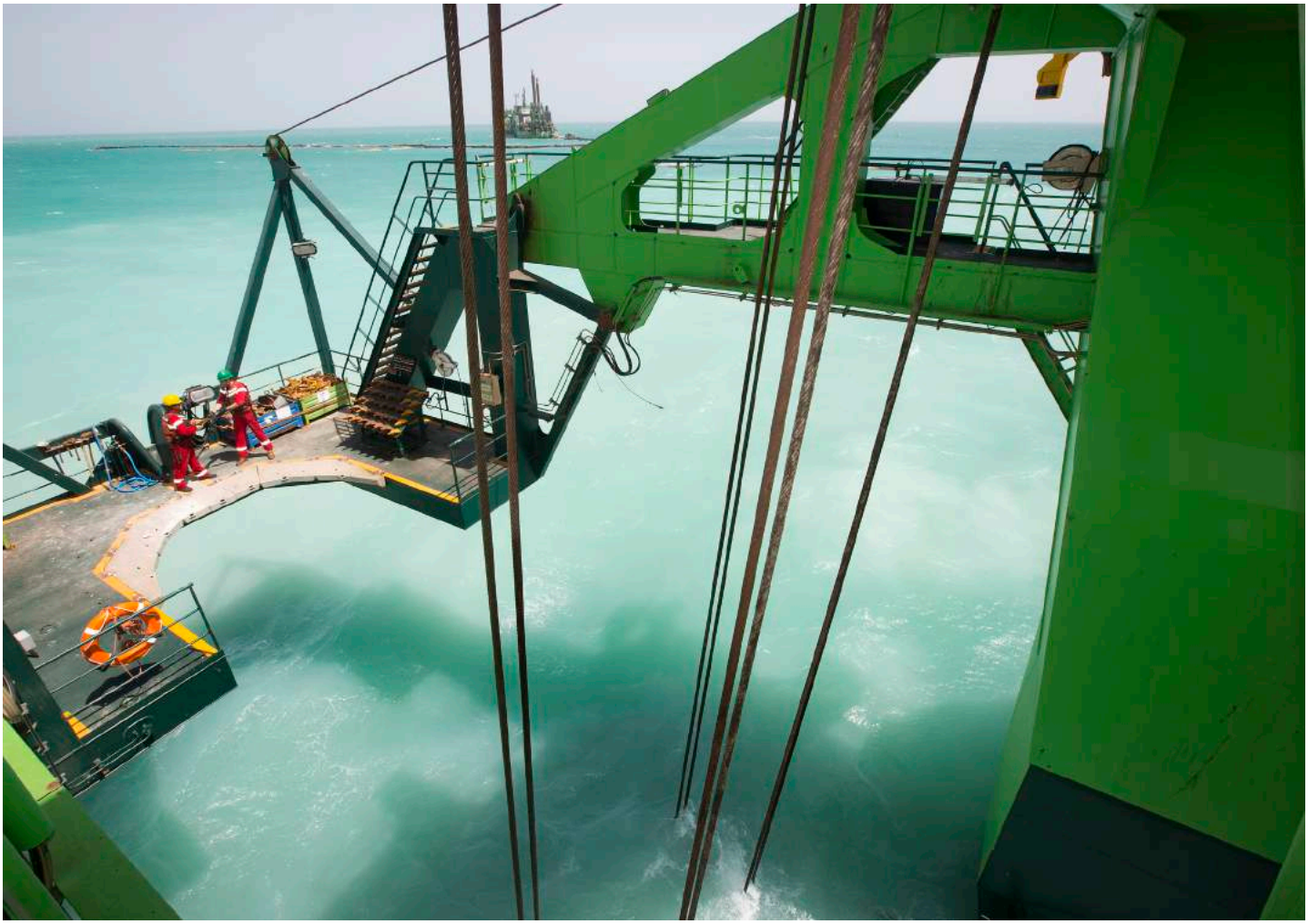
A SUSTAINABLE SOLUTION FOR THE LOCAL ECOSYSTEM

During the works at Hamad Port, MEDCO was responsible for performing a major environmental mitigation project.

The extensive programme included relocating 10,000 m^2 of seagrass, 6,100 mangrove trees, more than 10,000 hard corals and nearly 575 colonies of soft corals. In all cases the survival rates were above expectations and MEDCO managed to successfully relocate substantially more than it was obliged to do.

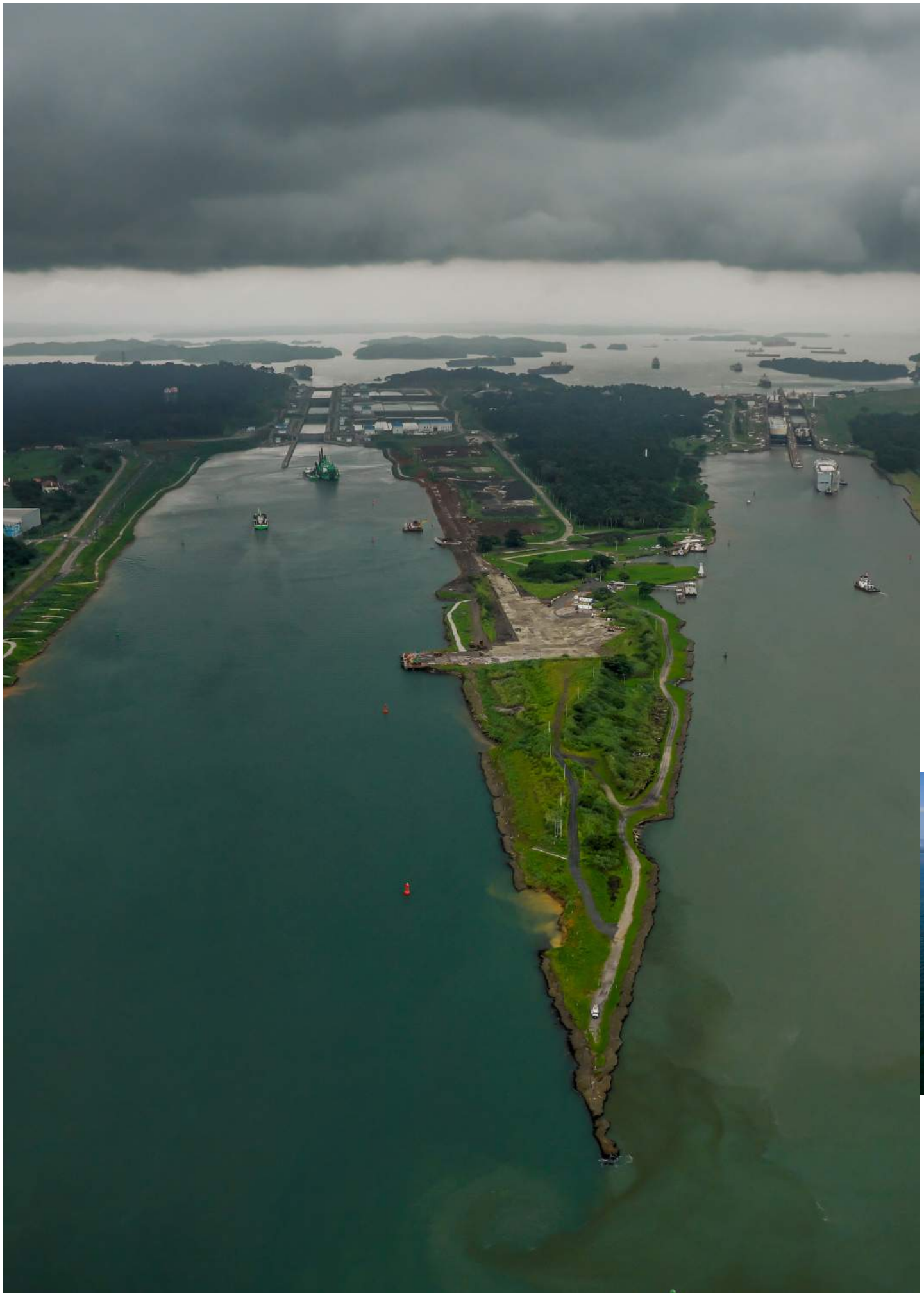
To ensure everything went smoothly MEDCO worked closely with the Ministry of Environment to carefully select relocation sites and to identify the best time to carry out this precision work. And indeed, it was crucial to study the identified sites well in advance to analyse the seasonal impact on the local ecosystem.

Hamad - Qatar At peak times about 1,600 people were working on the Hamad Port project



Dubai La Mer Open Beach project

Panama Capital dredging in the Atlantic Access Channel with CSD 'D'Artagnan' and split hopper 'Pagadder'



Latin America

PANAMA

PANAMA CANAL ATLANTIC ACCESS CHANNEL

DEME again returned to the historic Panama Canal project in 2017. After the successful completion of the further widening and deepening of the Pacific Access Channel in 2016, DEME was also awarded a similar contract for the Atlantic Access Channel. This will enable the Panama Canal to handle post-Panamax vessels.

With work wrapping up in the third quarter of 2017, some 1.9 million m^3 of soft and hard material were eventually dredged by the two DEME vessels TSHD 'Uilenspiegel' and CSD 'D'Artagnan'.

Porte Sudeste do Brasil - Brazil
Dredging with TSHD 'Pearl River' in Porto Sudeste do Brasil

BRAZIL

PORT OF SANTOS, SAO PAULO

Dragabras successfully completed its first year carrying out a maintenance dredging project on the access channel and inner harbour of the Port of Santos, Latin America's biggest port. Work started at the end of 2016 and ran until October 2017. Performed by the TSHD 'Pearl River', approximately 4 million m^3 of material was dredged. Following the first project, the client then renewed the maintenance contract for another year. 'Pearl River' will again be busy throughout 2018.

SEPETIBA BAY

In addition, DEME executed several other projects for private clients in 2017 in the Sepetiba Bay area. This included dredging more than 400,000 m^3 for Porto Sudeste do Brasil and a similar amount for Ternium Brasil.

VALE

Towards the end of 2017, Dragabras was awarded a contract to dredge the turning basin and access channel at Vale's facility in Sepetiba Bay. Work is expected to start in January 2018 and again 'Pearl River' will be deployed.

URUGUAY AND ARGENTINA

In December 2017, DEME was awarded a major, five-year contract in a joint venture for the deepening and maintenance of the Canal Martín García.

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 subject to a lot of sedimentation. The main objective of the dredging programme is to deepen the Canal and subsequently maintain a depth of 34 feet over the contract period. Several trailing suction hopper dredgers and a backhoe dredger will be deployed on the project.

The deepening and maintenance of the Canal is of major importance to regional and international economic development by providing better and safer access to the upstream ports on Rio Uruguay and Paraná and consequently lowering the logistics costs for the import and export of goods and commodities. DEME participated in the construction of the Canal Martín García in the early nineties.

Dredging activities are expected to start in March 2018.

Indian Subcontinent

INDIA

International Seaport Dredging (ISD) is DEME's local Indian subsidiary, with its head office located in Chennai. For almost two decennia ISD has been carrying out business development and project execution activities in India. While employing the maximum number of Indian staff on project sites, ISD can also count on the vast experience of DEME's staff and crew, next to the availability of its modern dredging fleet.

KAKINADA

ISD returned to the seaport of Kakinada for the annual maintenance dredging of the access channel, turning basin and berth areas. At the same time, some further deepening work of the port has also been completed successfully.

KAMARAJAR

ISD completed Phase 3 of the Kamarajar port development project near Chennai at the end of the year. Several hopper and cutter dredgers have been working on this phase, which included capital dredging work for the new container terminal, two coal berths, a multi-cargo terminal and a turning basin. Phase 4 of the port development is expected to get underway in 2018, once the environmental clearance is given.

SEABIRD PHASE II

In 2017 ISD was awarded the dredging, reclamation and soil improvement works for the Seabird Phase II project in a joint venture with Larsen & Toubro. These works are part of a major expansion project located near Karwar, on the west coast of the country. After an extensive contract documentation and site preparation phase including bush clearing, ISD started dredging at the end of 2017 to remove up to 10 million m^3 of materials of which half will be reused for reclaiming various areas. A significant proportion is hard rock, which will involve drilling and blasting techniques and removing the broken rock materials with mechanical dredgers.

Kamarajar - India TSHD 'Congo River' at the Kamarajar port development project

KARWAR

End 2017, ISD also started with the maintenance dredging of the approach channel, turning circle and berth basin at the civil port in Karwar. Reduced depths require assistance from a shallow dredger and grab dredger and Indian-flagged 'Antigoon' dredger will complete the deeper sections.

DHAMRA

The annual pre-monsoon maintenance dredging works in the access channel and turning basin of Dhamra Port, on the northeast coast of India, were completed by February.

MUMBAI

ISD welcomed DEME's largest hopper dredger 'Congo River' in Mumbai. Jointly with the local dredger, 'Antigoon', the vessel started the final maintenance sweep of the JNPT 4th container terminal's berthing and turning areas in November 2017. ISD also successfully carried out the capital dredging of these areas in the past.

5

Five million Lost Time Injury free hours achieved on November 1, 2017 in the India region.

Mumbai - India Maintenance dredging at JNPT 4th container terminal

Indian Ocean

LA RÉUNION

In La Réunion works continued apace for the "**Nouvelle Route du Littoral**". SDI is executing the dredging, gravel bed installation and backfilling works of 48 gravity-based foundations for the 5,400 m viaduct. 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. By the end of 2017, 19 of the 48 foundations were installed. The project will carry on in 2018 with backhoe dredger 'Pinocchio' and two split hopper barges.

MALDIVES

The TSHDs 'Congo River' and 'Nile River' operated in the Maldives in 2017 to execute three reclamation projects. DEME was borrowing sand in depths up to 60 m within the atolls.

EMBOODHOO

DEME completed the land reclamation works at Emboodhoo Lagoon, located in the South Male Atoll, where it reclaimed several dream islands, which will be turned into luxury resorts. The success of this project facilitated the award of the contracts for Rah Falhu Huraa and the Hulhumalé airport road.

RAH FALHU HURAA - FOUR ISLANDS

Sand was borrowed from the deeper layers between the lagoons to reclaim four islands, which are also destined to become five star resorts to further boost tourism in the Maldives. The island revetment works are part of the reclamation contract and have been started by DEME's subcontractor for completion in 2018.

HULHUMALÉ AIRPORT ROAD

DEME has already increased the size of Hulhumalé Island twice in the past. Before departing from the Maldives, the 'Congo River' further enlarged the island's surface area, providing the required additional land to facilitate the expansion of the existing road circulating around the airport.

19

19 of the 48 foundations were installed in 2017 for the 5,400 m viaduct of the "Nouvelle Route du Littoral" in La Réunion.

Maldives Land reclamation at Emboodhoo Lagoon

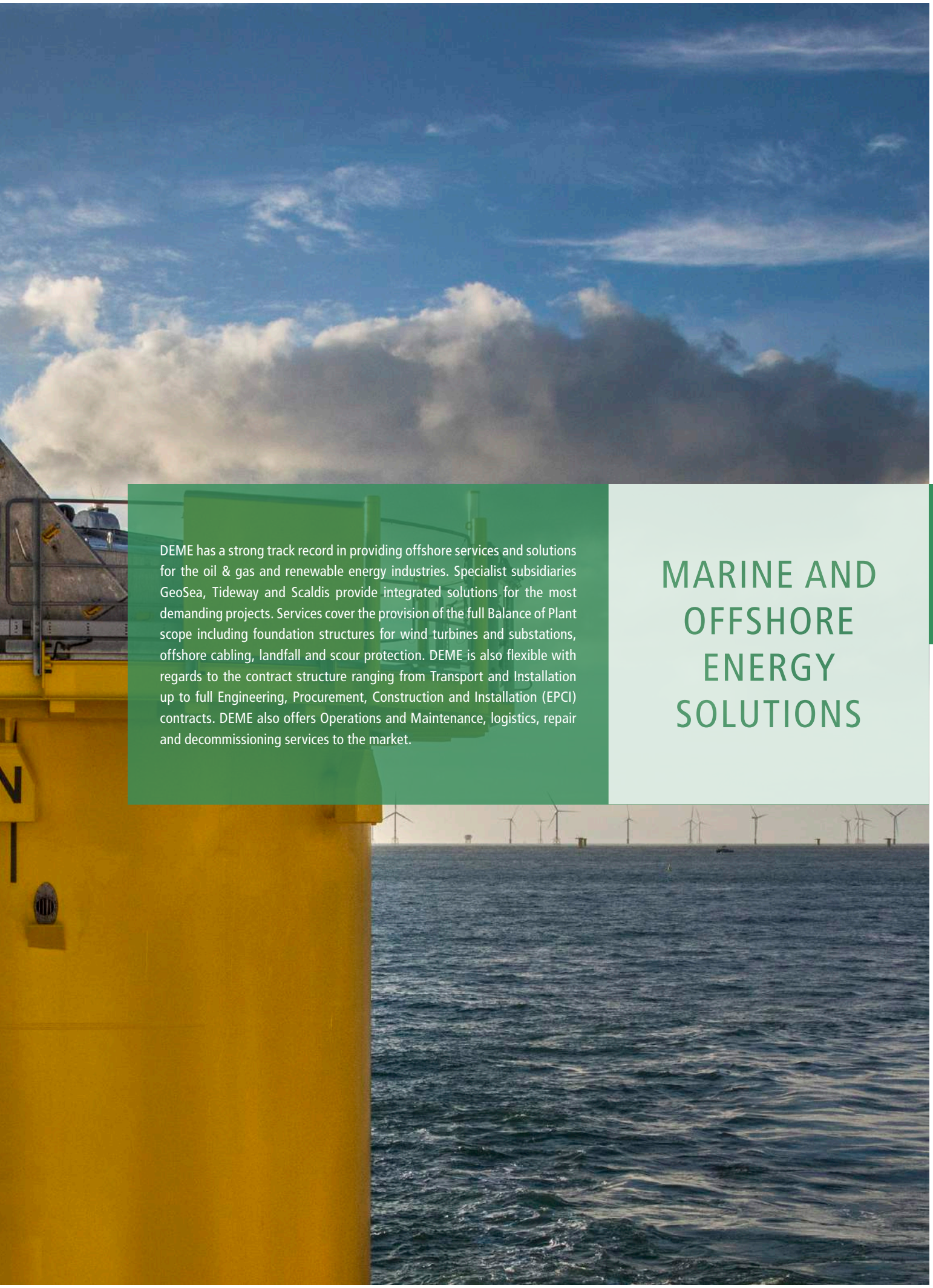
Port Louis - Mauritius Capital dredging by CSD 'Ambiorix'

MAURITIUS

In June 2017 DEME successfully completed the capital dredging works at Port Louis for the extension of the Mauritius Container Terminal. Works included dredging in various soil conditions, including rock. Heavy-duty cutter suction dredger 'Ambiorix', suitable to operate in heavy soil and rock conditions, was deployed on the project. The project was completed on time, safely and to the full satisfaction of the client, ensuring no disruption to the marine traffic operations at the port.

SUSTAINABLE DEVELOPMENT GOALS

- DEME is a pioneer in providing renewable energy solutions, including offshore wind, wave and tidal energy.
- DEME provides equity and project finance to support the development of renewable energy projects.



DEME has a strong track record in providing offshore services and solutions for the oil & gas and renewable energy industries. Specialist subsidiaries GeoSea, Tideway and Scaldis provide integrated solutions for the most demanding projects. Services cover the provision of the full Balance of Plant scope including foundation structures for wind turbines and substations, offshore cabling, landfall and scour protection. DEME is also flexible with regards to the contract structure ranging from Transport and Installation up to full Engineering, Procurement, Construction and Installation (EPCI) contracts. DEME also offers Operations and Maintenance, logistics, repair and decommissioning services to the market.

MARINE AND OFFSHORE ENERGY SOLUTIONS

GeoSea

GeoSea delivered a very strong performance in 2017. The achievements were driven by a high level of project execution and new contract awards across the European offshore renewables market, the expansion to China and Taiwan and the acquisitions of A2SEA and G-tec.

GEOSEA MAKES STRATEGIC ACQUISITION OF A2SEA

In August 2017 GeoSea completed the acquisition of the Danish company A2SEA, which is a market leader in the transport and installation of offshore wind turbines. The activities of A2SEA are a strong and complementary fit to those of GeoSea. While GeoSea is mainly specialised in foundation works and EPCI contracts, A2SEA is a pioneer in installing turbines and their maintenance. GeoSea has successfully worked on several projects across Europe, where A2SEA has later installed the turbines.

A2SEA has about 160 employees and operates the offshore installation vessels 'Sea Challenger' and 'Sea Installer'. The company has built a solid track record with more than 1,600 turbines installed over the past years. Projects include Gode Wind, Westermost Rough, Borkum Riffgrund 1, Anholt and Arklow Bank 1. In 2017, A2SEA installed 91 turbines at the Race Bank offshore wind farm and 67 turbines at the Dudgeon offshore wind farm. Upcoming projects include turbine installation at Arkona OWF, Hornsea Project One, Horns Rev 3 and East Anglia One.

With the acquisition, GeoSea will be able to leverage on the extensive customer network developed by A2SEA in Northern Europe.

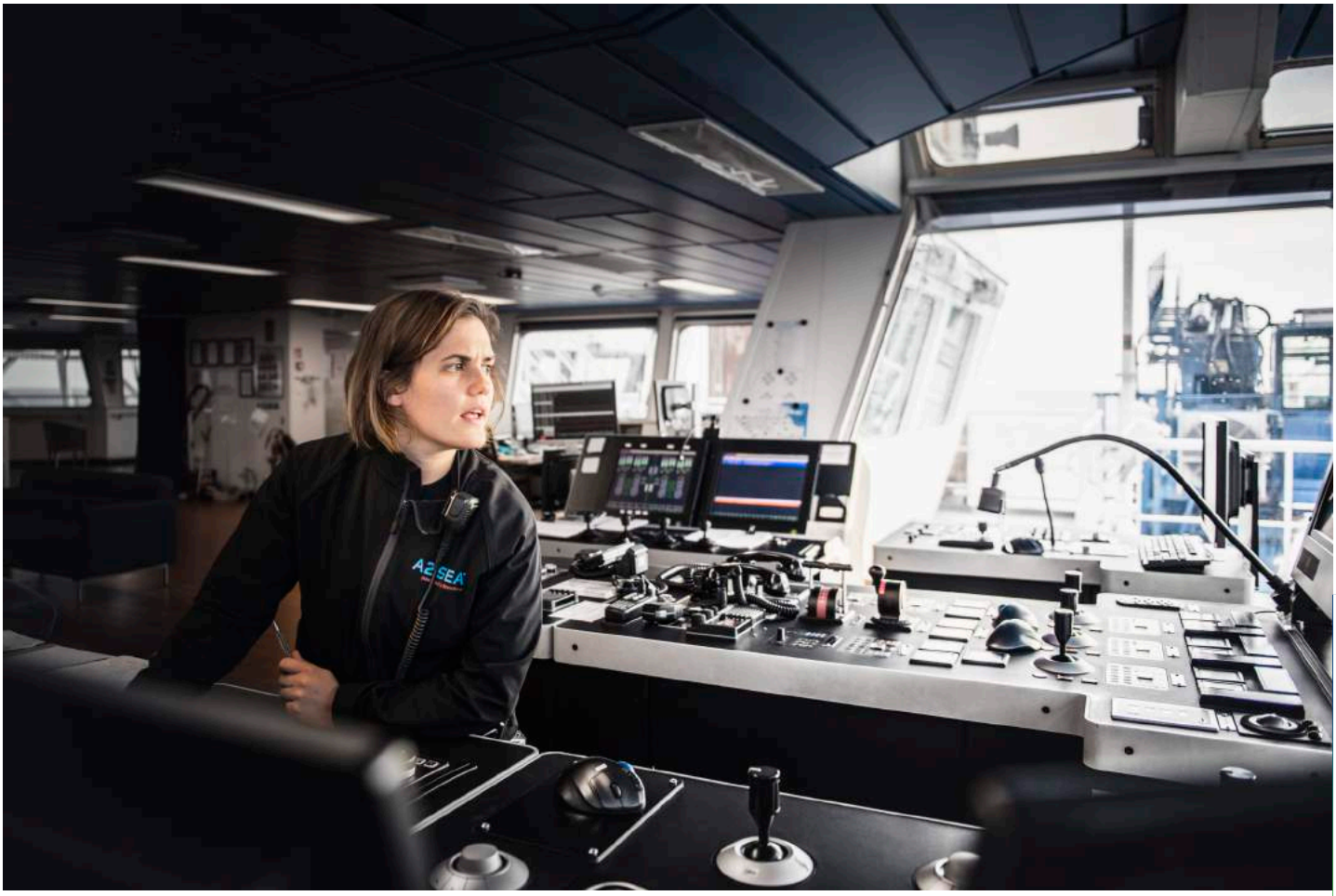
A MAJORITY SHARE IN G-TEC

In November 2017 GeoSea acquired a majority share (72.5%) of G-tec, a Belgium-based contractor specialised in offshore geotechnical and geological site investigations, geophysical marine and environmental surveys and deep sea engineering services. The other shares are owned by the Sociéte Régionale d'Investissement de Wallonie (SRIW). G-tec was founded in 1993 and employs over 40 highly skilled staff. The company also owns the unique, offshore geotechnical investigation vessel 'Omalius'. The company is active in offshore renewables, oil & gas, civil works and offshore mining. The highly specialised activities and know-how of G-tec represent a strategic fit, enabling DEME to further reinforce its fully integrated services in these markets. Geotechnical investigation from the GeoSea jack-up vessels is already part of the current offering. Furthermore, some years ago DEME took over G-tec's concession for the exploration of manganese nodules in the Pacific Ocean.

206

GeoSea installed 206 monopiles in 2017

Rentel - Belgium Installation of 42 foundations and transition pieces at Rentel



A2SEA, acquired in 2017, has about 160 employees and operates two installation vessels

PROJECT OVERVIEW

THE UK

After the installation of the last foundations at the **Race Bank** offshore wind farm in the UK, offshore installation vessel 'Innovation' set sail for **Galloper** to install 56 foundations at the 353 MW wind farm, which is located 30 km off the coast of Suffolk. Foundation installation was completed well ahead of schedule. It was the first project where the 'Innovation' was fitted with its specially designed 'spudcan shoes' to reduce the pressure of the jack-up legs on the seabed. Due to reduced cycle times, the project execution was cut down by several weeks.

At the end of 2017 GeoSea started the mobilisation for offshore construction at **Hornsea Project One**. In total, 174 monopile foundations will be installed at the site, located off the coast of Yorkshire. This wind farm represents a step change in the renewable energy sector: not only is it the largest in the world but it is also located 120 km offshore.

GeoSea also secured two major contracts in the UK. The company was awarded a contract for the transport and installation of 90 wind turbine generators for the 860 MW **Triton Knoll Offshore Wind Farm**. The collaborative approach adopted by Triton Knoll during the tender process, together with GeoSea's leading position in providing state-of-the-art, integrated solutions for the offshore wind industry, has helped the project deliver a sustainable, low cost of energy. GeoSea will work alongside Triton Knoll to engage with UK suppliers and to help maximise UK content. An investment decision is expected in 2018 with full onshore construction starting shortly afterwards, and offshore construction kicking off in 2020.

GeoSea also signed an agreement with the **Moray East Offshore Wind Farm** for the Engineering, Procurement, Construction and Installation (EPCI) of ca. 100 wind turbine foundations and three offshore substation platform foundations, as well as for the transport

UK 56 foundations were installed well ahead of schedule at the Galloper offshore wind farm

Merkur topside ready for sail away

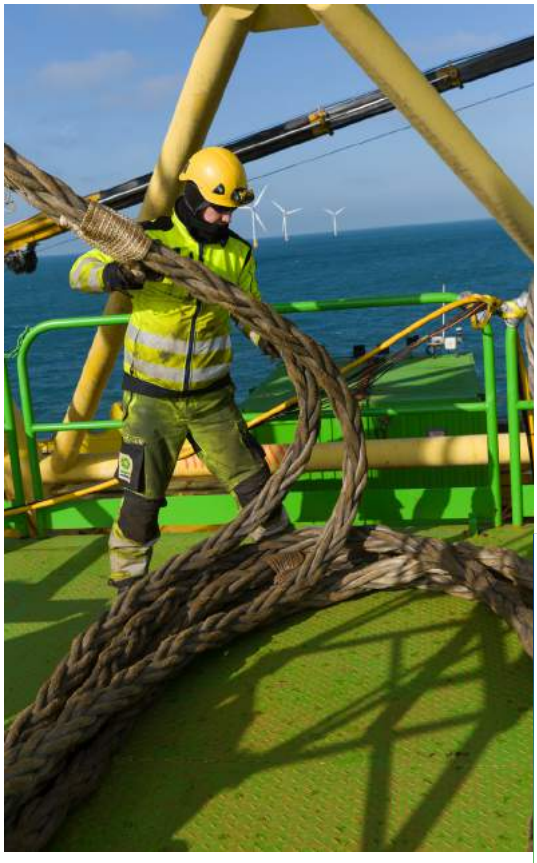
and installation of the three substation platforms. The contract award is subject to financial close, which is expected to take place in the second half of 2018.

GERMANY

In April 2017 installation works started at the **Merkur** offshore wind farm in Germany. For GeoSea the project has a very diverse scope. GeoSea is performing a full Balance of Plant EPCI contract, including an offshore substation. GeoSea is responsible for the design, construction and installation of the complete scope of work, including the foundations (monopiles and transition pieces), the offshore substation (topside and jacket), inner array cables and turbine installation. 66 monopiles have been successfully installed, as well as the offshore substation jacket. A2SEA's 'Sea Challenger' was deployed to install the transition pieces. The turbine installation is planned in 2018. The Merkur offshore wind farm, located 45 km north of Borkum, will have a 396 MW capacity.

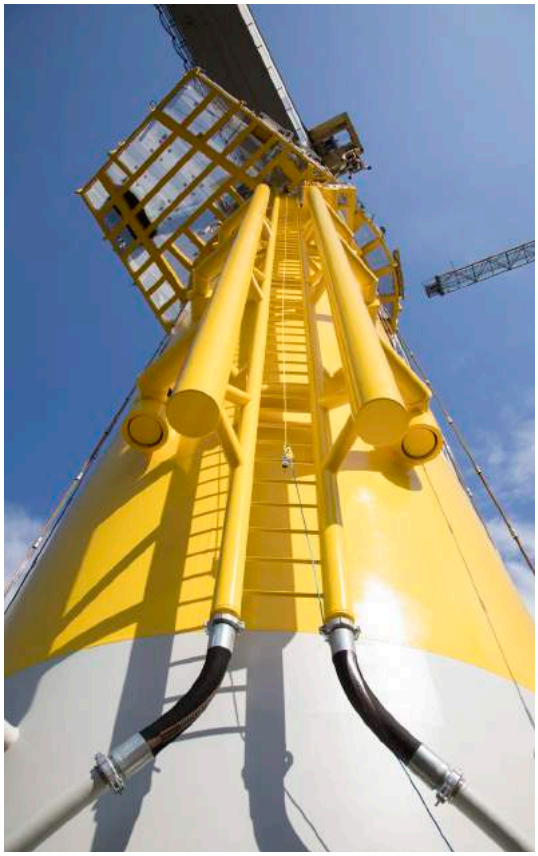
GeoSea is responsible for the design, manufacturing and installation of 71 turbine foundations for the EnBW 497 MW **Hohe See** offshore wind farm, for which GeoSea is Siemens' EPCI partner. Financial close for Hohe See was reached in February 2017. GeoSea is also responsible for the design, fabrication and installation of foundations at the **Albatros** offshore wind farm. Directly adjacent to Hohe See, the 16-turbine Albatros offshore wind farm will have a capacity of 112 MW.

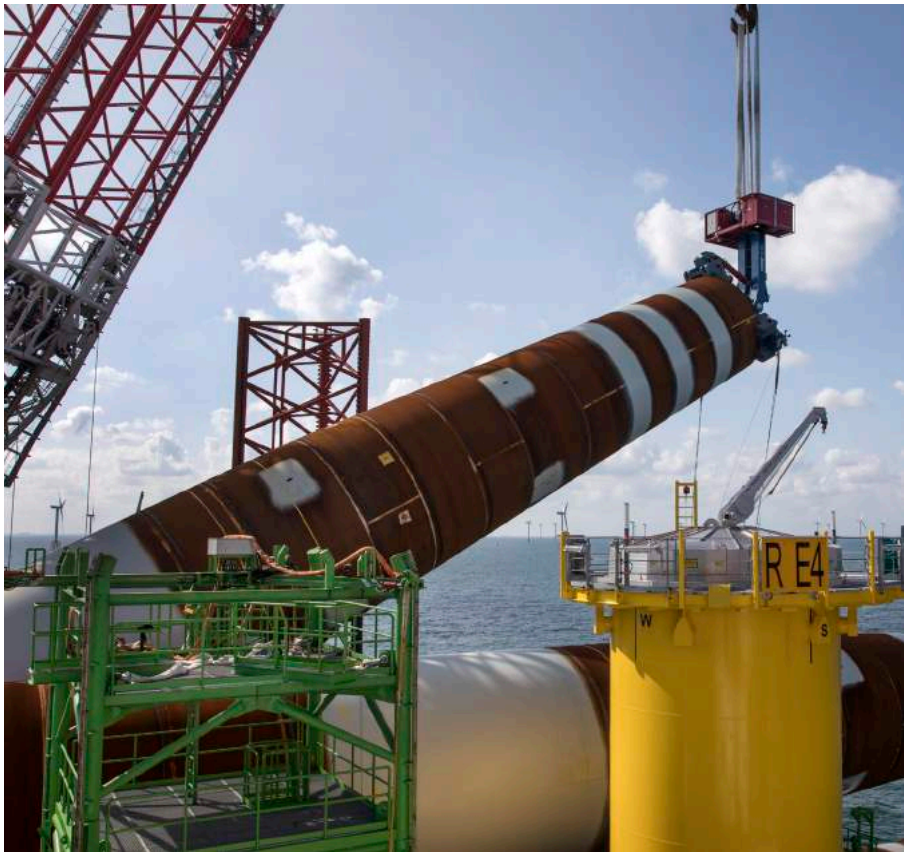
Preparations are ongoing for the **Borkum Riffgrund 2** offshore wind farm, where GeoSea will transport and install 20 suction bucket jackets. Borkum Riffgrund 2 will have a total capacity of 450 MW and will feature 56 turbines of 8 MW. The size of the suction bucket jackets is certainly impressive, with each jacket weighing around 950 tonnes and having a height of 58 m.



Germany Foundation installation at the Merkur offshore wind farm

Belgium Monopile and transition piece installation at the Rentel offshore wind farm





BELGIUM

At the end of July 2017 construction started at the **Rentel** offshore wind farm in the Belgian North Sea. The last foundation was hammered in during September, and this was followed by the installation of the offshore substation foundation. The wind farm will feature 42 turbines and have a total capacity of 309 MW, enough renewable energy to supply about 300,000 households in Belgium. GeoSea is scheduled to carry out the installation of the turbines in the second quarter of 2018. With a height of 183 metres, they will be the largest wind turbines thus far in the Belgian North Sea.

DENMARK

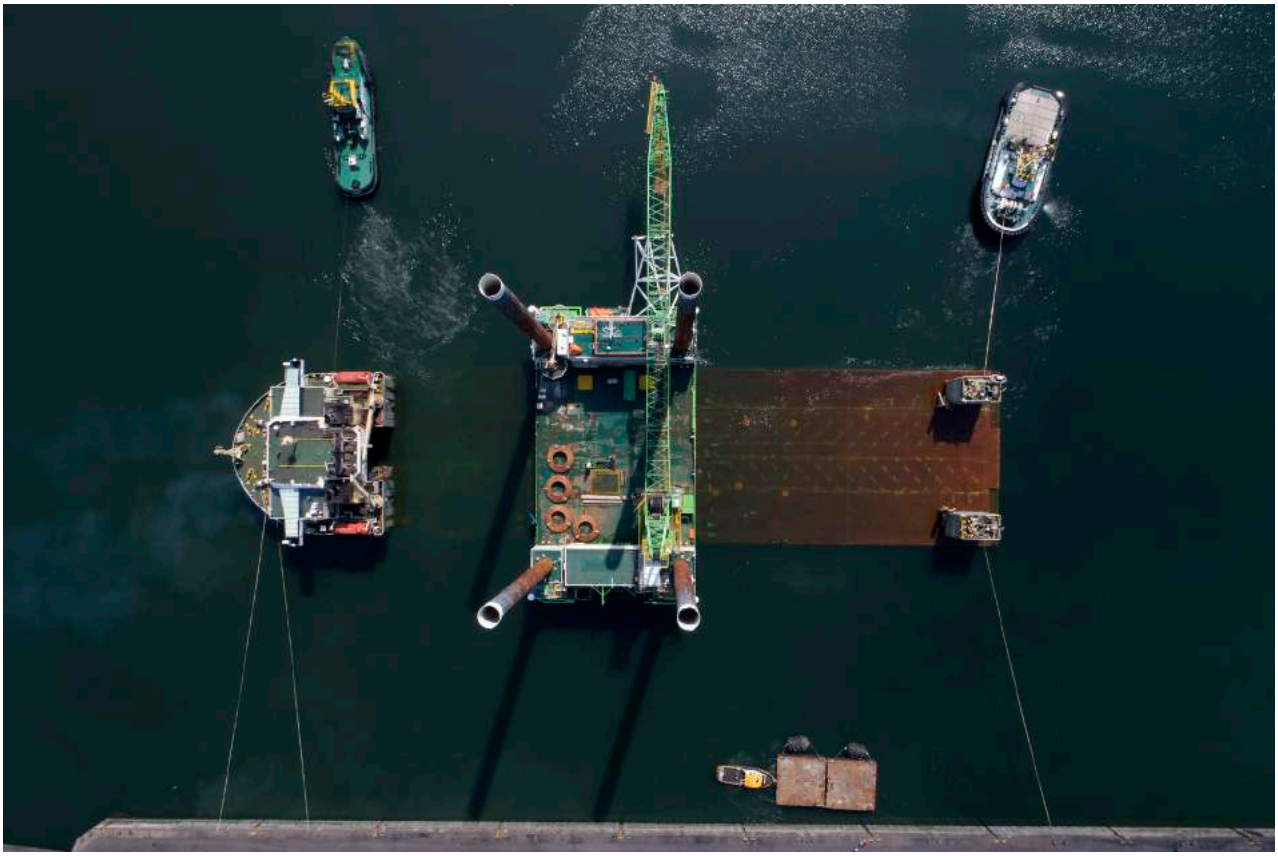
In October 2017, monopile installation kicked off at the **Horns Rev 3** wind farm located off the Danish west coast. The installation was completed early 2018. The 406.7 MW wind farm is an extension to Horns Rev 1 and 2 and when fully commissioned in 2018, it will be the largest wind farm in Denmark.

CHINA

DEME and COSCO Shipping, the largest shipping company in the world, are partnering in a unique joint venture to develop offshore wind energy in China.

This is in line with the Chinese climate vision and strategy for the development of renewable energy, which is incorporated in the 13th five-year plan issued by China's central government for social and economic development. China is targeting a significant increase in the installed capacity of offshore wind energy by 2020.

Jack-up vessel 'Goliath' sets sails to China for first offshore wind farm project



With its extensive know-how in developing, building and maintaining offshore wind farms, DEME can support COSCO Shipping's offshore wind ambitions to become a significant player in this market segment. As a pioneering company in offshore renewable energy, this is an excellent opportunity for the export of DEME's experience gained on projects in Europe and in its home market in Belgium.

A first milestone was achieved in May 2017, when the DP2 jack-up vessel 'Goliath' was loaded aboard COSCO's semi-submersible heavy lift vessel 'Kang Sheng Kou' in the port of Flushing. The vessel set course to COSCO's shipyard near Shanghai for some last modifications before embarking for the first offshore wind installation projects off the eastern coast of China. 'Goliath' has been renamed 'LiYa' (Elegant Power) and now operates under the Chinese flag.

In December 2017 the first turbine was installed at the **Binhai H2** wind farm for CDNE, the joint venture between COSCO and GeoSea in China. The scope of the project includes the installation of 60 turbines at the 400 MW wind farm.

TAIWAN

In 2017 GeoSea entered into a Cooperation Agreement for the Taiwanese offshore wind market with CSBC Corporation, Taiwan's largest shipyard.

The Taiwanese Government has set out an ambitious agenda to reduce the island's dependency on nuclear and fossil fuels, and instead, tap into its rich offshore wind resources. The government is aiming to install a minimum of 3 GW in offshore wind capacity in the Taiwan Strait by 2025. Bolstered by Taiwan's favourable investment conditions, a diverse group of major international developers have submitted proposals that could bring the total installed capacity to 12 GW or higher in the decade to come.

GeoSea and CSBC will now form a Taiwanese joint venture, combining GeoSea's advanced techniques, diverse fleet and know-how with CSBC's market knowledge, its position as the main proponent 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.

Subject to regulatory approval procedures, the joint venture will be incorporated in Taipei by the middle of 2018, and will start bidding for the upcoming offshore renewables tenders straightaway.

GEOSEA MAINTENANCE

As the offshore wind industry matures there is an increasing demand for service and maintenance activities. GeoSea Maintenance provides supporting services to asset owners and turbine suppliers in the offshore wind industry. Through intensive cooperation with its clients and by listening to their needs, GeoSea Maintenance understands their requirements and works towards tailor-made solutions that meet the customer's demand, while allowing them to keep their costs under control.

Offshore wind turbines are getting bigger and wind farms are being built further and further offshore. The industry needs supply chain partners that can follow this trend. In 2017 GeoSea Maintenance has built up a leading position in the maintenance of +5 MW wind turbines. Major component exchange campaigns were carried out with jack-up vessels in the North Sea and Irish Sea for different customers. With the addition of A2SEA's jack-up vessels, 'Sea Challenger' and 'Sea Installer', GeoSea Maintenance can rely on an even broader fleet of high-tech marine assets and is well equipped to meet today's and future demands. This results in shorter response times, better availability and higher electricity output.

With an innovative approach and the necessary operational experience with the crew transfer vessels 'Aquata' and 'Arista', GeoSea Maintenance continuously investigates 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 a strong track record and vast experience in the European home market, GeoSea Maintenance is also exploring new business opportunities on other continents, benefiting from the global network built by DEME and GeoSea.

GEOSEA CIVILS

GeoSea Civils focuses on the engineering and construction of marine structures for the mining, oil & gas, energy and other high-tech industries. With the jack-up vessel 'Vagant', a three-year maintenance contract was completed in Nigeria on behalf of Nigeria LNG Ltd.

In Ghana, GeoSea Civils operated as a subcontractor at the Kpone Independent Power Plant project, providing engineering and advice for the jacking works. 'Vagant' was deployed to assist diving and crane operations for the power plant water intake installation.
In the UK GeoSea has been appointed as a nominated subcontractor for the Hinkley Point shaft construction.

EVERSEA

EverSea offers first-class, offshore contracting solutions to the oil & gas industry, with the skills, technology and equipment to perform in the most challenging marine environments. Solutions include the offshore installation and decommissioning of platforms and modules, plug & abandonment services and well services.

Many oil & gas installations around the world are reaching the end of their economic production lifecycle. Decommissioning presents a major challenge from a safety, environmental, technological, as well as an economical perspective. In 2017 EverSea secured a major contract for the decommissioning of seven satellite platforms of the LOGGS complex in the North Sea. EverSea will deploy DEME's versatile fleet of jack-up vessels to execute the project.

GeoSea Maintenance carried out several major component exchange contracts

Rentel Offshore Wind Farm Belgium

The construction of the Rentel Offshore Wind Farm in Belgium illustrates DEME's multidisciplinary capabilities, where it provides a total solutions package to renewable energy clients.

EUROPE

FLEET

TRAILING SUCTION HOPPER DREDGERS
'Uilenspiegel'
'Lange Wapper'
'Minerva'

OFFSHORE INSTALLATION VESSEL
'Innovation'

FALLPIPE AND CABLE INSTALLATION VESSELS
'Flintstone'
'Rollingstone'

CREW TRANSFER VESSELS
'Arista'
'Aquata'

HEAVY LIFT VESSEL
'Rambiz'

A DIVERSE SCOPE

Marine logistics services for maintenance activities.

Rock placement for scour protection, the substation and export cable crossing with 'Rollingstone'.

Engineering, procurement, transport and installation of the foundations and transition pieces.

Wind turbine installation with A2SEA's 'Sea Installer'.

Financing by DEME Concessions (18.89% share).

Trenching works for the export cable with 'Uilenspiegel' and 'Minerva'.

Offshore topside foundation installation with 'Innovation' and topside transportation and installation with 'Rambiz'.

Cable installation with 'Flintstone'.

42

TURBINES (THE LARGEST EVER INSTALLED IN THE BELGIAN NORTH SEA)

- Total installed capacity of 309 MW
- Energy supply for 300,000 households
- 40 km export cable
- 35 km infield cable (between turbines)
- Mast height wind turbine: 106 m

150,000

TONNES OF ROCK

150,000 tonnes of rock placed by the 'Rollingstone'.

ADVANCED TRENCHING TOOL

Cable burial works were optimised with the CBT 1100 trenching tool.

FOCUS

Tideway

Tideway serves every type of offshore energy company, and is active in both oil & gas and in the renewables industry, assisting clients in the wind, wave and tidal sectors. As an EPC contractor Tideway offers tailored solutions and a broad range of services including seabed preparation and rock placement for wind farm constructions, power cable installation, landfall construction and pre- and post dredging for the support of pipe laying operations. A second line of activity is precision stone dumping for pipeline crossings, platform approaches and offshore ballasting. Operating three state-of-the-art fallpipe vessels, Tideway executes rock placement in depths of up to 2,000 m.

Despite the low oil price and a decline in investments in the oil & gas industry, Tideway has successfully executed several projects in this market recently. The company also had a busy year in the offshore wind energy market.

OIL & GAS

In a joint venture, Tideway has been awarded all the pre-trenching and backfilling landfall works for the **Saudi Aramco Hasbah Offshore gas facilities** in the Arabian Gulf. Trench excavation is due to be completed in 2018. This is Tideway's first project in Saudi Arabia.

Additionally, Tideway secured its first contract in Bangladesh when it was awarded the **Moheshkali Floating LNG Terminal project**. It will be the country's first LNG import terminal and is expected to help secure the future provision of energy in the country. With the CSD 'Ambiorix' Tideway executed the dredging and pre-trenching works for the access channel to enable the client's pipe lay barge to perform the shore pull operation of the pipeline.

Another contract was secured in the gas market for the pre-trenching and backfilling works of the **Leviathan project**, offshore Israel. Works need to be completed in the second half of 2018.

RENEWABLES

In August 2017, Dredging International secured a contract from Elia, Belgium's electricity transmission system operator, for the company's **Modular Offshore Grid** in the North Sea. Elia's Modular Offshore Grid, or so-called electricity plug, includes an Offshore Switchyard Platform (OSY) located about 40 km off the Zeebrugge coast, to which four wind farms will be connected. Submarine cables will link the platform with a substation in Belgium, which will inject the wind energy into the Belgian onshore grid. The installation scope includes the supply, installation and maintenance of the submarine power cables. Offshore installation works will be executed by Tideway in 2019 .

Meanwhile, at the **Rentel** offshore wind farm Tideway installed all the inter-array cables and the export cable. 'Flintstone' was deployed for the cable installation works, while the 'Rollingstone' executed post-trenching and rock placement works. With the goal to reduce cable installation times and cost, Tideway ensures that all of its cable laying and trenching equipment is deployed as efficiently as possible. The cable burial works at Rentel for example, were optimised with the CBT 1100 trenching tool.

Tideway was also awarded all the inter-array cable installation works for the **Merkur** offshore wind farm. In Germany, Tideway will perform rock placement works for the **Trianel Borkum West II** offshore wind farm in 2018.

Furthermore, Tideway has been awarded all cable installation, pre-trenching, backfilling and rock placement works for the world's largest offshore wind farm **Hornsea One**. Works started in 2017 and will continue until 2019. The project involves a staggering 450 km of export cables. Pre-trenching works have started with the TSHD 'Lange Wapper'.

Rock placement for the cable protection at the **Caithness-Moray** power link project in Scotland started in 2017 with the fallpipe vessel 'Seahorse' and will continue in 2018. With the link, Scotland is strengthening its power network serving the north in a major programme to accommodate a rapid growth in renewable energy generation.

Scotland Fallpipe vessel 'Seahorse' is deployed for rock placement works at the Caithness-Moray power link

"There is never a boring day. The opportunity to work within various departments or on different project stages provides a stimulating environment where valuable knowledge is taken on board, starting with a strong safety culture and best industry practice, to the newest technological developments."

Cristina Vasilache

OFFSHORE SUPERINTENDENT

'CTOW Eli', 'CTOW Lala' and 'CTOW Bieke'

CTOW

Combined Marine Terminal Operations Worldwide (CTOW) offers a full package of professional maritime services for the operation of dedicated maritime terminals. CTOW is a joint venture company owned by DEME, Herbosch-Kiere and Multraship. The company seeks early involvement and an integrated and turnkey approach to the development, management and the operation of terminals and ports.

NIGERIA

In 2017 CTOW continued its activities in Africa and did so with an excellent HSE track record thanks to the commitment from all of its employees.

At **Bonny Island LNG terminal**, CTOW was awarded an extension of a contract to operate two newbuild 60-tonne bollard pull ASD tugs, '**CTOW Bieke**' and '**CTOW Lala**', which support Nigeria LNG Ltd (NLNG).

Since entering service in April 2016, the tugs are operated by CTOW's Nigerian subsidiary CMTON Ltd, which deploys a 100% Nigerian crew.

Meanwhile in **Onne**, CTOW continued to provide harbour towage services to the port's container terminal throughout 2017.

THREE NEW VESSELS

After the award of a second contract by NLNG, the fleet was joined by a Stan Tender 1905 **pilot launch** - the '**CTOW Eli**' - which entered service in November 2017. The 19 m pilot launch also has MEDEVAC capacities. CMTON Ltd hired nine more crew members for the new vessel.

In 2018, two additional newbuild tugs will join the vessels in Bonny. More powerful tugs are needed, given the planned increase in size of the carriers and tankers calling at the terminal. The two new 80-tonne bollard pull tugs will take up their role by mid-2018.

Named '**CTOW Kathy**' and '**CTOW An Sofie**', the two tugs were launched in September 2017 and arrived in Nigeria in March 2018.

1,865

Number of vessel assistances provided by the CTOW fleet.

Scaldis

LIFTING AT A HIGHER LEVEL

Scaldis is a dynamic, innovative and customer-focused international offshore contractor specialised in marine heavy lifting works. The company broadly divides its business into five distinct offshore market sectors: civil construction, oil & gas, renewables, decommissioning and salvage. To meet the rapidly expanding offshore markets, Scaldis will be operating a new heavy lift vessel in 2018 with a lifting capacity of 4,000 tonnes. The 'Gulliver' will possess many of the key assets of the 'Rambiz', but will also incorporate new developments that will extend the possibilities of this new heavy-lift vessel:

- **Upgraded workability**
- **Increased lifting capacity and lifting height**
- **Fully self-propelled DP2 vessel**
- **Skidding cranes to allow greater flexibility to deck spaces**
- **Enlarged deck space**
- **Helideck**

CIVIL

INSTALLING DRILLING MODULE

Scaldis mobilised the 'Rambiz' to Norway for the stacking of the S-620 module of the Johan Sverdrup Drilling Equipment Set. The module had a weight of 1,700 tonnes and was placed within the five millimetre tolerance.

OIL & GAS

TRANSPORT AND INSTALLATION OF L13-F1

Scaldis installed the unmanned gas platform L13-F1 for NAM which was the first mono tower installation without the use of a gripper frame or installation template on board of Scaldis' heavy-lift vessel 'Rambiz'. The lifting, upending, positioning and driving of the monopile foundation was carried out using a combined Vibro Lifting Tool. The verticality of the monopile was installed well within the tolerance limit. Upon completion of the vibro piling installation works, Scaldis subsequently installed the column and topside.

UK Horne & Wren decommissioning

'Gulliver' will have a lifting capacity of 4,000 tonnes

DECOMMISSIONING

HORNE & WREN DECOMMISSIONING

In April 2016 Tullow Oil awarded the contract for the removal of the offshore Horne & Wren platform. Scaldis' heavy-lift vessel 'Rambiz' was mobilised from Flushing in March 2017 and sailed to the field. In the following three offshore days the complete platform was decommissioned, an in- and out seabed survey was carried out, and the topside cut, lifted and sea fastened on board of the 'Rambiz'. Subsequently the piles of the jacket were dredged and cut to the target depth, whereupon the internal lifting tools were installed and the jacket lifted. The 'Rambiz' returned with the topside stowed on deck and the jacket suspended in PS crane back to Flushing in the Netherlands to a disposal yard.

PERENCO

Scaldis also decommissioned three offshore gas platforms for Perenco. The majority of these offshore lifting and transportation works were carried out in 2017.

RENEWABLES

TRANSPORT AND INSTALLATION OF THE RAMPION AND NORDERGRÜNDE SUBSTATIONS

Scaldis was contracted to transport and install the Rampion substation for EON. Scaldis installed the jacket for this substation in 2016. The next phase was the installation of the topside for the Rampion wind farm. Thanks to the good alliance between EON and Scaldis, the excellent crew and detailed preparations, the 2,000 tonne topside was safely installed well ahead of schedule.

WPD contracted Scaldis to install the first bolted substation for the Norder-gründe offshore wind farm. The topside, weighing more than 2,000 tonnes, was lifted and installed on a monopile foundation flange. The alignment of the two flanges was the main challenge during this project. Close cooperation between the engineering departments of WPD and Scaldis was essential for the success from this project.

UK Transport and installation of the Rampion substation


WWW.GEOSEA.BE

DEME Blue Energy

MEYGEN PHASE 1A EXCEEDS EXPECTATIONS

DEME is keen to play a leading role in the development of blue energy, which mainly concerns tidal and wave energy projects. To further this ambition DEME Concessions acquired a minority interest in the Scottish development company Tidal Power Scotland Limited (TPSL), which controls the MeyGen project, the world's first tidal stream turbine array power station connected to the electricity grid.

MeyGen, located at Pentland Firth in Scotland, is seen as the reference project for the global blue energy industry. At the end of 2016, DEME's subsidiary GeoSea installed the four gravity-based foundations for Phase 1A, (each of 1.5 MW), and these are now successfully operational and performing better than the original predictions.

REMAINING MEYGEN PHASES AT RISK

Late last year, the UK Government announced the cancellation of a separate support mechanism for wave and tidal energy projects. This has led to the postponement of the financial close for MeyGen Phase 1B, originally foreseen in 2017.

DEME and the MeyGen partners are now hoping that the UK Government will reintroduce this financial support system, at least to a certain extent, in order to reach financial close for Phase 1B in 2018, which will comprise more or less another 6 MW of tidal turbine capacity. This would then be followed by Phase 1C representing a capacity of 75 MW. If all the proposed phases, including Phase 2 and 3, come to fruition MeyGen will have a capacity for 398 MW, generated by ca. 250 turbines.

WEST ISLAY AND FAIR HEAD

In addition to the participation in TPSL, DEME Blue Energy is involved in two other tidal energy developments – the West Islay Tidal Energy Park in Scotland (30 MW) and Fair Head in Northern Ireland (100 MW). These projects are currently being developed in cooperation with an Irish partner, DP Marine Energy.

DEME is also involved in DEME Blue Energy (70% DEME Concessions - 30% ParticipatieMaatschappij Vlaanderen). Furthermore, in cooperation with Nuhma, DEME Blue Energy is also a joint venture partner in BluePower, another tidal energy development company.

SUSTAINABLE DEVELOPMENT GOALS

- DEME's specialised subsidiary Purazur is a leading provider of water treatment solutions for industrial waste water, investing in new technologies to recycle this valuable resource.
- With brownfield remediation and redevelopment, DEME is breathing new life into polluted and contaminated sites. This sustainable land use strategy is a way to address the scarcity of land for housing and urban development.

6 CLEAN WATER AND SANITATION

11 SUSTAINABLE CITIES AND COMMUNITIES

14 LIFE BELOW WATER

DEME's specialist environmental companies - DEME Environmental Contractors (DEC), de Vries & van de Wiel and Ecoterres - take a proactive role in 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.

ENVIRONMENTAL SOLUTIONS

DEME Environmental Contractors (DEC)

BELGIUM

NINE FORMER GAS SITES FOR EANDIS

After a three-year project DEC, together with a joint venture partner, cleaned up nine former gas sites belonging to the Flemish utility company Eandis, which were located all over Flanders. The largest brownfield site in the centre of Kortrijk was around 5,000 m^2. Remediation works on all nine sites were completed and they have now been sold to a project developer.

BLUE GATE, ANTWERP

A major project, which highlights DEME's proactive way of tackling brownfield sites, is Blue Gate Antwerp. The City of Antwerp awarded the Blue O'pen consortium, comprising DEME and real estate and sustainability specialist Bopro, a contract to remediate and redevelop a 63 ha site into a top location for eco-innovation in a public-private partnership (PPP), whereby the consortium has the majority share. The site, which is located along the River Scheldt, was a former oil/petroleum facility, which is polluted with mineral oils, PAKs and heavy metals, and is considered to be the last remaining 'urban wasteland' in Antwerp.

After the soil investigations, DEC started the remediation of the site in July 2017 and plans to complete the work in May 2018. DEC will then start work on the infrastructure, which will run until May 2019. Blue Gate Antwerp is expected to be fully developed by 2030.

FORD GENK

In 2017 DEC won, as part of the consortium Genk Green Logistics, a public tender to remediate 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. DEC will start work on the 140 ha site this year.

UCB AND TAMINCO, GHENT

DEC has also been awarded a contract from the multinational, biopharmaceutical company UCB together with Taminco, a global specialty chemical company, for its Ghent site whereby DEC has to immobilise and remove the contents of a historic dump site at the premises. 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.

ZONNEBERG TERRANOVA, GHENT

The remediation of the former gypsum dump site of Nilefos in the port of Ghent is nearing completion. The former dump site is now fully encapsulated and covered with clean soil, reflecting the new name "Terranova". On the top of the site, the new 15 MW "Zonneberg" solar farm is producing green energy for 4,000 households. Plans are being elaborated to create a recreational and nature area on the site, perfectly integrating the 50 m hill in the landscape.

DEC and its joint venture partner acquired an 8 ha brownfield site from Bayer adjacent to the "Zonneberg". After a successful remediation campaign this will now be sold for development. Also, the remediation of the former Nilefos gas works site was completed in 2017. This included dismantling structures that had been contaminated by radiation. The site will now be used to establish the new "Dockland" chemical cluster.

'NEW DOCKS', GHENT

The first phase of the prestigious 'New Docks' project in the centre of Ghent has been successfully executed. The former docks were bought by project developers and DEC is working in partnership with them to remediate the ground to the highest environmental standards. The old industrial site will be transformed into a new quarter of the city with 1,500 homes, businesses and recreational areas. 'New Docks' will be fully compliant with all the latest environmental regulations and it is designed to be entirely electricity neutral, using effluent as the main heating source. DEC is due to complete its work there by the end of 2018.

OTHER PROJECTS

In Balen, DEC is performing a project involving the dehydration of Nyrstar's process residue. DEC is carrying out the tailing management, dewatering and making filter cakes from the material. DEC is also working for de Vlaamse Waterweg (the Flemish inland waterway authority) as part of a seven-year contract. DEC treats the dredged sediments at its centres throughout Belgium.

Valløy - Norway Remediation of a former refinery site

AMORAS

DEC has 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 & FRANCE

With several soil and sediment recycling centres in Belgium and the Netherlands, DEC, de Vries & van de Wiel and Ecoterres treated 1.36 million tonnes of polluted soil and dredged sediments in 2017, making them the leading companies in this specialised activity in Belgium and the Netherlands.

ITALY

TARANTO

DEC was awarded a major contract to dredge an outlet and to treat the dredged material using a soil washing installation at the ILVA steel plant in Taranto. The project is expected to run throughout 2018.

NORWAY

VALLØY, TØNSBERG

Remediation work continued on the Esso Norge site, a formed refinery site located near Tønsberg, Norway. This contract represents an important milestone for the company being the first time DEC has been awarded a contract from ExxonMobil. Preparation works on the ExxonMobil site infrastructure started in November 2015 and is due to complete in 2018.

DEC has to ensure that every part of the operation meets the strict health and safety requirements imposed by ExxonMobil and the Norwegian Environment Agency. DEC expects 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. Eventually, the Esso Norge site has to be restored to meet the Norwegian Environment Agency's standards for a future mix of commercial and residential use.

UNITED KINGDOM

AVENUE COKING WORKS, CHESTERFIELD

Phase 3 of the huge remediation project of a 100 ha coking site near Chesterfield, in the United Kingdom was successfully completed in mid-2017. The project got underway in 2009. This had been a heavily polluted site with black tars, cyanide and many contaminates present, with 1 million m^3 eventually treated. The site is set to be used for residential and recreational purposes.

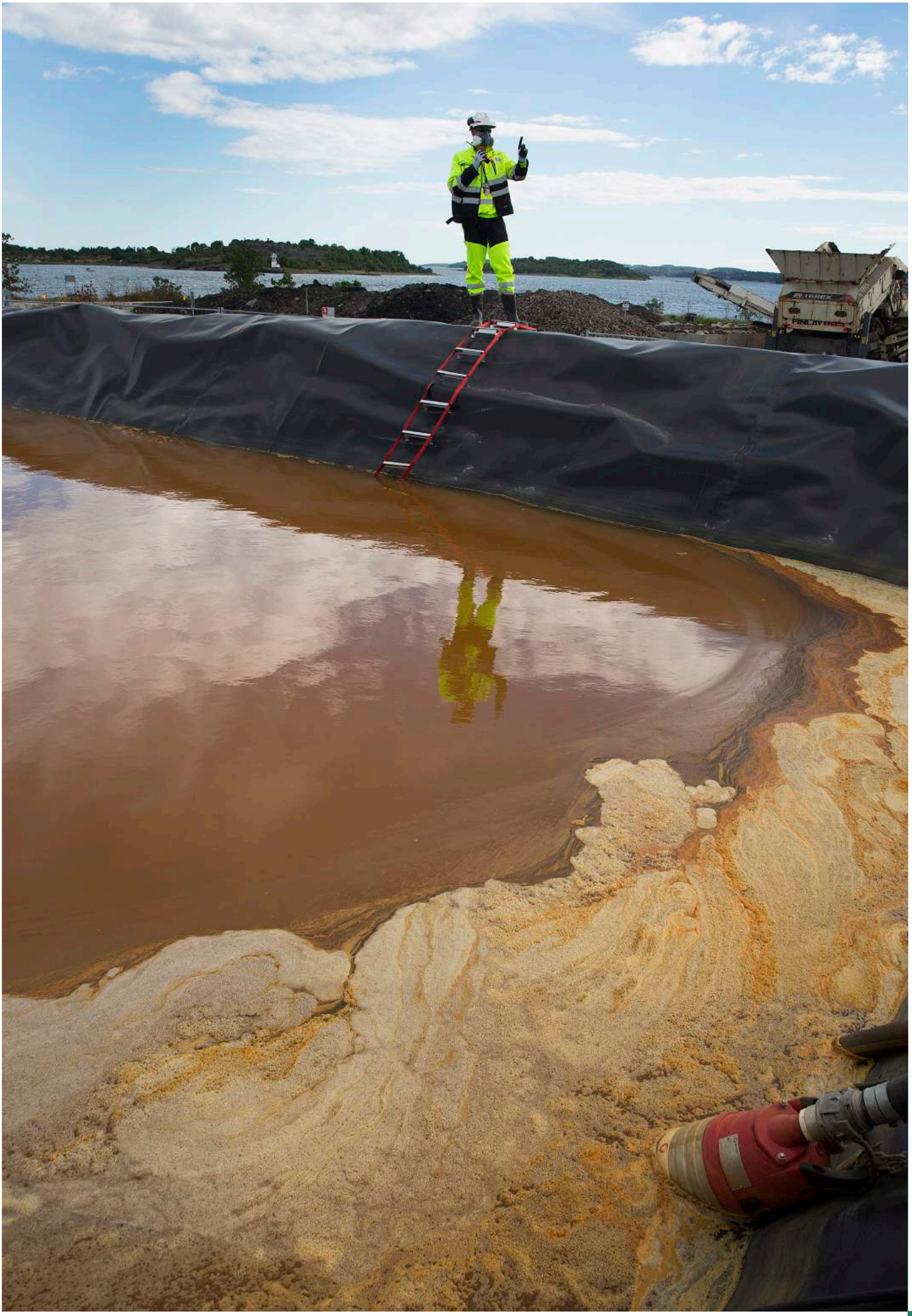
STAVELEY GOYTS, CHESTERFIELD

On a nearby site DEC started a project to dredge several small channels, which contain heavily contaminated sediments. This project came to a close in the summer of 2017.

NEW SOIL TREATMENT CENTRE OPENS IN LONDON, UK

In a joint venture with Brett, DEC opened the 'ReclaiM25' soil treatment facility at the Brett Aggregates Hithermoor recycling site just off the M25. The facility has a capacity of more than 100,000 tonnes and is permitted to accept a broad range of hazardous and non-hazardous soil and mineral-based material from construction and industrial sources in and around West London. Brett and DEC have a longstanding relationship. This is the first time DEC has had a facility in the London area.

Valløy - Norway Remediation work continued on a former refinery site



Alphen aan den Rijn - the Netherlands Remediation at former NAF gasworks site

Belgium Water treatment specialist Purazur secured several new contracts

De Vries & van de Wiel

De Vries & van de Wiel was involved in several major remediation projects in Amsterdam, Haarlem, Den Helder and their surrounding areas in 2017.

THE NETHERLANDS

VOGELEILAND AND WIERHOLT NATURE RESERVES

NAM awarded de Vries & van de Wiel, (as a subcontractor of Reym BV), a contract to treat offshore and onshore waste such as drilling cuttings, drilling mud and wastewater from its oil & gas activities. De Vries & van de Wiel is targeting more of these oil & gas projects, and also in the future it expects to handle similar projects for the wind energy sector too.

The contaminated waste from NAM's activities is treated and then the soil is reused in a project to create nature reservations in the Den Helder area, such as the Vogeleiland and Wierholt projects. Both of these are examples of creating new nature with techniques such as immobilisation, where former waste flows are reused in a sustainable way. These two projects were successfully completed in 2017.

MILIEUPARK OOST

In a further award, de Vries & van de Wiel will work on the transformation of a part of the Milieupark Oost reserve, which will create a new nature area. Milieupark Oost is a public private partnership between the Council of Den Helder and de Vries & van de Wiel. Work on this third site is expected to start in the second half of 2018.

ALPHEN AAN DEN RIJN

Additionally, de Vries & van de Wiel was awarded a new contract to remediate a former NAF gasworks plant in Alphen aan den Rijn. The company was responsible for dredging and the removal of all the polluted materials in difficult circumstances because of ongoing marine traffic, which could not be disrupted. This project was completed in the third quarter of 2017.

Purazur

BELGIUM

INDAVER, ANTWERP

Purazur, the DEME Group subsidiary specialising in water treatment, built a new water treatment installation for Indaver, the Antwerp-based waste treatment company, with work coming to an end in November 2017. Purazur was responsible for the design, construction and commissioning of the new facility. Indaver treats industrial hazardous waste in three rotary kiln incinerators. The company's existing water treatment installation had reached the end of its useful life. Purazur focuses on the high-tech treatment of industrial and domestic waste water, percolate water from landfills and contaminated groundwater.

BOREALIS, KALLO

Purazur is also building a new water treatment installation for the chemical company Borealis in Kallo, Belgium. Purazur is responsible for the design, installation, construction and commissioning. This will expand the current water treatment installation at the Borealis plant. Purazur was able to develop a compact design that could be incorporated into the limited space of the existing production facility. The design and the off-site construction started in 2017 and it is due to be delivered in the first half of 2018.

Ecoterres

Ecoterres had a very busy year in 2017, carrying out a wide range of specialist environmental services. The company carried out depollution works at several sites in Belgium and France.

BELGIUM

Some 50,000 tonnes of polluted material were removed and taken for off-site for treatment in Wallonia. This included:

- ArcelorMittal in Seraing, Liège - Works started in 2016 (totalling 20,000 tonnes) and were completed in 2017.
- Houget-Duesberg-Bosson - Ecoterres was responsible for the demolition of an old yarn manufacturing mill and depollution works (15,000 tonnes) in Verviers (Liège) in a joint venture.
- Depollution works took place in Nivelles for a real-estate development (20,000 tonnes).
- Following depollution works at the Codami site in Manage (also in a joint venture), the company carried out on-site soil management.
- Depollution works took place at several small sites.

Ecoterres also performed several projects concerning the on-site confinement of materials, deploying HDPE liners, Geosynthetic Clay Liners, Drainage Mattresses etc.

- The company started the final remodelling and capping of a Class 2 waste landfill site in Mont-Saint-Guibert.
- The capping of a heavily polluted chemicals site in Tertre continued.
- Work was completed on the remodelling and capping of a polluted industrial site in Ghlin.
- Several smaller projects, including constructing a new storm basin, were also carried out.

Additionally, Ecoterres dredged 95,000 m^3 of sediments from the Walloon waterways (dredging and sediment management). For this project, all the sediments were dredged by the company's equipment and transported by Ecoterres' own barges. The material was discharged into treatment centres with high-density pumps.

All in and out survey controls were also provided by Ecoterres with its modern measuring and surveying equipment, the vessel 'Zig Zag'.

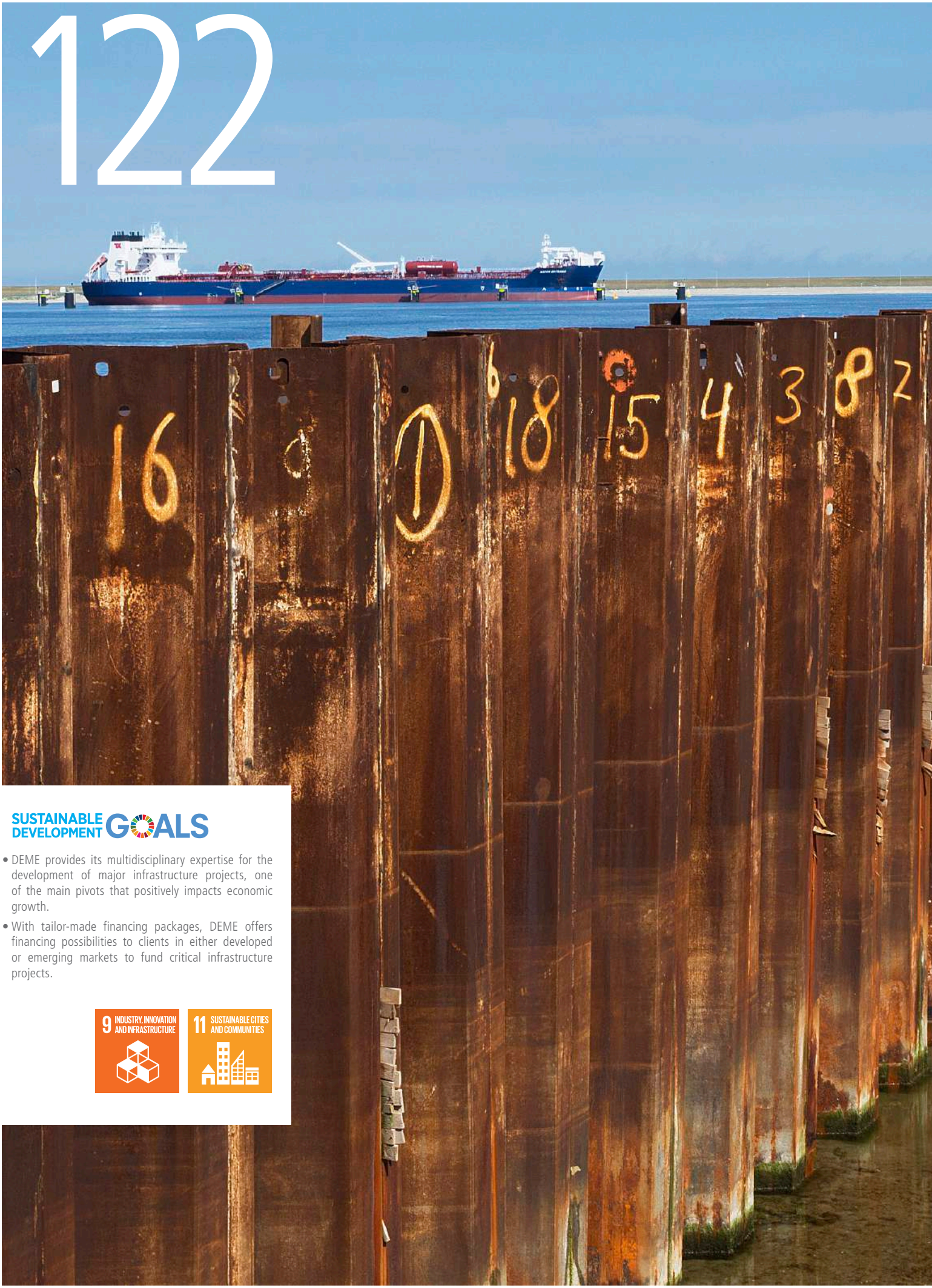
FRANCE

Ecoterres dredged 35,000 m^3 of sediments from the Scheldt River in France (dredging and sediment management). All the sediments were dredged using the company's own equipment. Together with SDI, Ecoterres finished a four-year maintenance dredging contract (with the sediment management taking place at a local centre) in Dunkirk. In 2017, the contract for the next four years (20,000m^3/year) was awarded to SDI-Ecoterres again, and work has already started.

The company started all the preparation works for the cleaning and widening of the Condé-Pommeroeul Canal (between the Scheldt River in France and Canal du Centre in Belgium). Works include the creation of three final landfill sites for the sediments, with the related earthmoving works, waterproofing (HDPE liner and GCL), dredging works and the shore protection. Following the preparatory phase, operations got underway at the beginning of 2018.

SOIL AND SEDIMENT TREATMENT CENTRES

Ecoterres' soil and sediment recycling centres of Petit Try (Charleroi), Cetraval (Brussels), Filterres (Liège), Sedisol (Charleroi) and Bruyère-sur-Oise (France) all performed well. More than 250,000 tonnes of polluted soils and sediments have been treated in the facilities in Wallonia and about 150,000 tonnes in Bruyère-sur-Oise. As these centres are strategically located along waterways, and in an effort to offer sustainable solutions, Ecoterres encouraged companies to carry out the transport of the polluted and treated soils/sediments by water. More than 100,000 tonnes were transported on the waterways in 2017.



SUSTAINABLE DEVELOPMENT GOALS

- DEME provides its multidisciplinary expertise for the development of major infrastructure projects, one of the main pivots that positively impacts economic growth.
- With tailor-made financing packages, DEME offers financing possibilities to clients in either developed or emerging markets to fund critical infrastructure projects.

DEME Infra Marine Contractors (DIMCO) is involved in marine infrastructure and civil works that complement and reinforce DEME's activities. These include amongst others 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, civil works for harbour construction, dams and sea defences, canal construction, revetment, quay wall construction and shore protection. The company also has a specialised engineering and design department, which can assist DEME clients.

INFRA MARINE SOLUTIONS

DIMCO

AN EXCEPTIONAL YEAR FOR DIMCO

2017 has been a truly exceptional year for DIMCO with the award of three major contracts in the Netherlands. The infrastructure projects will be an opportunity to maximise the DEME Group's joint expertise, from dredging and infra marine know-how, including bored tunnels, to the supply of marine aggregates. The technique of bored tunnels, DIMCO's specialism alongside marine civil works, closely relates to the dredging technology of the DEME Group. Also, DIMCO embraces a true partnership philosophy to provide a total solutions package to customers. The infrastructure projects in the Benelux home market are an important reference for DIMCO to look into new business opportunities in other markets in Europe and beyond.

THE NETHERLANDS

RIJNLANDROUTE

In early 2017 DIMCO secured the contract for the RijnlandRoute, the new road connection from Katwijk, via the A44, to the A4 at Leiden. The COMOL5 joint venture, including DIMCO, Mobilis, Croonwolter&dros and VINCI Construction Grands Projets, will be 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. The project partners of COMOL5 have ample experience with designing and developing large infrastructure projects such as bridges and tunnels, particularly bored tunnels.

NEW LOCK TERNEUZEN

The Flemish-Dutch Scheldt Commission awarded the Sassevaart joint venture the contract for constructing the New Lock Terneuzen. The Dutch-Belgian joint venture includes DIMCO, Dredging International and construction companies BAM Contractors, BAM Infra Nederland and Van Laere.

The joint venture will be responsible for the design, construction as well as the maintenance of the New Lock for a period of two years. The New Lock will be constructed on the existing Terneuzen locks complex, between the West and East locks. The lock will be 427 m long, 55 m wide and 16 m deep.

The New Lock will provide better access to the ports of Ghent and Terneuzen, and a faster flow of shipping between the Netherlands, Belgium and France. The New Lock will also provide an economic boost for Zeelandic Flanders (Zeeuws-Vlaanderen), and the Flemish region.

The works kicked off with a ground breaking ceremony in November 2017. The first ship is expected to sail through the New Lock in 2022.

"With our expertise and equipment we will definitely be able to add value to the infrastructure projects. Cofferdams, combiwalls, dolphins and fendering will be executed with our own equipment, such as pontoons, cranes and hammers. It feels good when I see DEME's combined expertise is used on these projects. Hopefully, these synergies will grow in the coming years."

Michiel Reedijk

OPERATIONS MANAGER


DIMCO

BLANKENBURGVERBINDING

Rijkswaterstaat awarded the Public-Private Partnership (PPP) project A24 Blankenburgverbinding to BAAK Blankenburg-Verbinding, a consortium consisting of DEME Concessions Infrastructure, Ballast Nedam and Macquarie. The project consists of the design, build, financing and maintenance for a period of 20 years of the existing and new infrastructure, including an immersed tunnel.

The A24 Blankenburgverbinding connects the A20 and the A15 and improves the access to the economically important Rotterdam region. The A24 Blankenburgverbinding leads (from the north to the south) from the A20, which lies to the west of Vlaardingen, along the Krabbeplas, underneath the channel Nieuwe Waterweg ('het Scheur') and will be connected to the A15 to the east of Rozenburg. Furthermore the project consists of the construction of two junctions (of the A24 to the A20 and the A15) and the widening of the A20 between the A24 and the Kethelplein.

The project Blankenburgverbinding originates from the Masterplan Rotterdam Vooruit (2009), a vision of the development of the Rotterdam region that covers the period 2020-2040. The area is characterised by rural surroundings on the northside of 'het Scheur' and on the southside by industry and homes. The construction of an overground tunnel will reduce the barrier function and at the same time increases the liveability of the area. Het Scheur will be crossed by an immersed tunnel.

Construction is expected to begin in August 2018 and the connection is planned to be operational at the end of 2024.

OFFSHORE TERMINAL ROTTERDAM

DIMCO successfully concluded the works at the Offshore Terminal in Rotterdam. In a joint venture with a Dutch contractor, the 460 m long quay wall was completed ahead of schedule. The new terminal brings together the manufacturing and logistics for offshore wind foundations. The offshore

The Netherlands DIMCO will construct an immersed tunnel for the Blankenburgverbinding

installation vessel 'Innovation' was the first vessel to use the new quay wall for the load-out of foundations and transition pieces for the Galloper and Rentel offshore wind farms.

SPOORZONE DELFT

Works at the Spoorzone Delft project continued in 2017. DIMCO is involved in the construction of a 4-track rail tunnel with a length of 2,400 m. In August, the West tunnel was successfully handed over to ProRail within the foreseen milestone. The project is due for completion in 2018.

PORT OF ROTTERDAM

DIMCO executed several projects in the Port of Rotterdam. Works included the construction of mooring dolphins and buoy piles, a new jetty at the Maasvlakte Oil Terminal and the extension of the Calandsteiger jetty.

RENOVATION STUW ENSEMBLE (RSN)

Together with two Dutch partners, DIMCO continues the upgrading works of the lock and weir complex on the river Lek. The weirs were originally developed between 1960 and 1970 to act as barriers across the rivers to regulate the discharge of water. Works will carry on in 2018.

Rotterdam - The Netherlands Works were successfully concluded at the Offshore Terminal Rotterdam

Delft - The Netherlands The Spoorzone Delft includes a 4-track rail tunnel

SUSTAINABLE DEVELOPMENT GOALS

- DEME is developing techniques for the sustainable deep sea harvesting of nodules on the ocean floor, partnering with scientific and academic institutions.

14 LIFE BELOW WATER

With DEME Building Materials (DBM) and Global Sea Mineral Resources (GSR), DEME is offering solutions for a sustainable supply of fluvial and marine resources.

DBM is DEME's subsidiary specialised in the extraction, transport, processing and supply of marine aggregates for the European construction industry. The aggregates originate from DEME's various marine sand and gravel concessions and from third-party licences. Having built up a reserve of over 300 million tonnes and with a high production capacity, DBM can offer a reliable and constant supply of quality aggregates.

GSR is developing breakthrough solutions for the sustainable deep sea harvesting of polymetallic nodules. While the demand for raw materials is expected to increase significantly in the coming decades, existing sources are becoming scarce. These trends caused a growing interest in the possibilities offered by deep sea mining throughout the world and has led DEME to establish its own in-house specialist subsidiary GSR.

FLUVIAL AND MARINE RESOURCES

'Mellina'
'Mellina' converted from a hopper into a dry-discharging aggregate dredger

Boulogne-sur-Mer - France Production of marine aggregates

DEME Building Materials (DBM)

BUSY YEAR AS EUROZONE IMPROVES

2017 was a busy year for DBM as the European economy showed a definite improvement and the construction industry picked up in the UK, France, Germany, Belgium and the Netherlands. DBM reopened its aggregates facility in Amsterdam and added a third vessel to its fleet.

IJMUIDEN LOCK, AMSTERDAM

The year got off to a strong start with the award of a major contract to supply gravel (up to 22 mm) for the new IJmuiden Lock in Amsterdam. At 500 m long, 70 m wide and 18 m deep, this will be the world's largest sea lock. This award follows on from the successful completion of the Kieldrechtsluis in Antwerp, which is currently the world's largest sea lock, where DBM supplied over 1.3 million tonnes of sand and gravel.

NEW AGGREGATES FACILITY IN AMSTERDAM WESTPOORT

For the IJmuiden Lock project, DBM can benefit from its own nearby facility in Amsterdam Westpoort, which currently has a capacity of 1 million tonnes a year. The aggregates are sourced from DBM's licences in the Humber estuary in the UK, for which all the necessary permits were obtained.

DBM has also joined forces with Dredging International and DEME Infra Marine Contractors (DIMCO), enabling customers to benefit from the strong synergies within the DEME Group. Several new projects, also including Dredging International and DIMCO, are coming up in the Benelux such as the construction of the RijnlandRoute, the Blankenburg Tunnel link and the New Lock Terneuzen. The construction phase of all these projects is scheduled in 2018, 2019 and 2020.

STRONG DEMAND

DBM has again experienced strong demand for gravel from the company's own facility in Flushing (Vlissingen), which has a capacity for 2 million tonnes. The company supplied over 1.3 million tonnes for the construction of the Kieldrechtsluis in 2013 and 2014. After some calmer years in 2015 and 2016 DBM saw an increase in demand in 2017, especially for gravel. Some of the major assets of the site in Flushing include its constant quality, high capacity and logistical flexibility. For example, this has created the possibility to supply a floating concrete plant directly by river barges, which in turn, is a very efficient solution for projects located along waterways.

In Belgium, DBM's own facility in Ostend experienced steady growth from the local construction market. In France the various long-term supply contracts for deliveries in Dieppe and Le Havre are ongoing, as well as the production and distribution of marine aggregates in the region of Boulogne-sur-Mer and Dunkirk. Several major infrastructure projects in Paris fuelled demand from these sites.

NONSTOP WORK FOR DBM'S NEW FLEET ADDITION

An increasing demand for marine aggregates is highlighted by the addition to the fleet, 'Mellina'. The 'Mellina' was already in the DEME fleet and was converted from a standard hopper into a dry-discharging aggregate dredger, with a capacity of 5,000 tonnes. Since joining her much bigger sisters in June, the gravel trailers 'Charlemagne' and 'Victor Horta', which have a capacity of 10,000 tonnes each, she has not stopped work and she has a healthy order book. The decision to invest in a smaller vessel stems from both DBM's need for additional transport capacity, as well as an increasing demand from smaller harbours and ports.

6.20

6.20 million tonnes of aggregates were delivered in 2017

DEME Building Materials

FACTS & FIGURES

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

28

- Delivery to 28 terminals

690

- 690 loads of aggregates supplied in 2017

>25

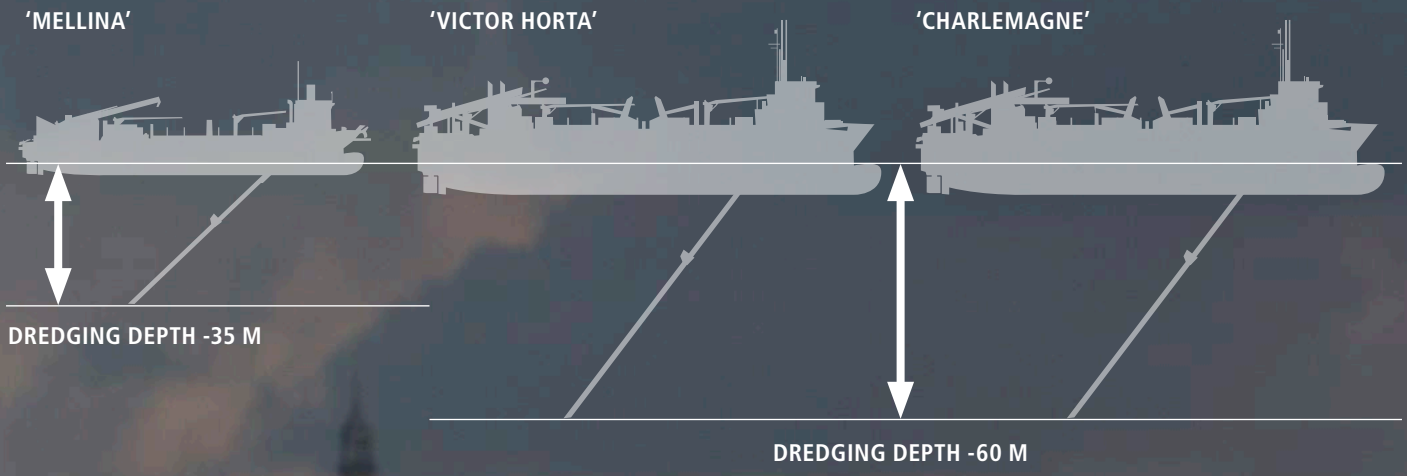
- More than 25 gravel concessions and third party licenses across Europe

PROCESS

1 Dredging of marine aggregates
2 On board screening of the aggregates
3 Cargo dewatering
4 Dry unloading by grab and conveyor belts
5 On land screening
6 Crushing
7 Washing
8 Result: certified construction aggregates

3

- Operating three gravel dredgers



FOCUS

Global Sea Mineral Resources (GSR)

As the world continues to see the impact of global warming and the increase of CO_2 emissions, the DEME Group believes that it is vitally important to address this issue with pragmatic solutions. One possibility to mitigate the impact is to explore the potential of deep sea mining.

This led DEME to establish its own in-house, seabed mining company - Global Sea Mineral Resources (GSR), focused solely on sustainable marine harvesting.

In 2013, the International Seabed Authority and GSR signed a 15-year contract for the prospection and exploration for polymetallic nodules. Under the contract, GSR has exclusive rights for the exploration of 76,728 square km of seabed in the Central Pacific Ocean. The type of deposit consists of polymetallic nodules that are on the surface of the seabed at a 4,500 m water depth. These nodules contain nickel, cobalt, copper, manganese and molybdenum.

Through its PROCAT project, GSR is well on the way to developing the world's first tracked nodule collector. 2017 was a very exciting year as several important milestones were achieved.

FIRST EXPEDITION IN THE CENTRAL PACIFIC

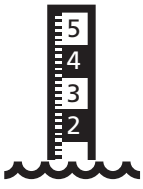
After many months in development, the so-called tracked soil testing device (TSTD) 'Patania' was successfully tested on land in January 2017 to make sure it was ready for its first expedition offshore in May. The 'Patania' was then shipped off for a 45-day expedition in the Central Pacific. More than 50 people, including geologists, scientists (oceanography, environmental) and geotechnical engineers were aboard. The purpose of this initial expedition was to gather in-situ soil data, allowing the engineers to reduce the impact area of the track system, whilst guaranteeing sufficient trafficability of the collector vehicle. In addition, deep sea mooring systems were installed to provide future environmental and operational reference data.

'PATANIA 2'

At the same time, 'Patania 2' is under development. GSR and its partners have built a dedicated test facility in a laboratory in Antwerp to validate a new type of suction head, designed to balance energy consumption, pick-up efficiency and plume generation. The prototype has been travelling up and down for several months in a 45 m tank with a sediment base similar to that of the Central Pacific collecting artificial and actual nodules from the GSR contract area. Tests have proven successful on the machine's ability to 'hoover up' the nodules, whilst minimising the impact on the surrounding sediment. Currently, a new track design will be integrated with an improved suction head design into the 'Patania 2' prototype. Detailed engineering is expected to be completed in early 2018 and then 'Patania 2' has to be ready in October to be shipped out to the US to embark on the next expedition in 2019.

Finally, GSR has teamed up with an international consortium of scientists in the JPIO II initiative, which will monitor the in-situ environmental impact of the 'Patania 2', again gathering crucial design data, allowing GSR to further redesign its technology to increase efficiency and reduce its impact.

This unique collector vehicle will be capable of harvesting nodules at staggering depths of 4,500 m.



4,500

Tracked soil testing device 'Patania' was tested at a staggering water depth of 4,500 m

KEY DEVELOPMENTS ARE DRIVING DEMAND FOR SEABED MINING

Rapidly increasing global population

The UN states in its 2015 World Population Prospects' Report that by 2050 there will be more than 9.7 billion people on this planet, which represents a 32% increase in the next 35 years.

Urbanisation

66% (compared to 54% today) of the world population is projected to be urban. Additionally, mineral consumption is rapidly climbing as the global standard of living increases.

Phase-out of fossil fuel

The G7 leaders have agreed to phase out fossil fuel by 2100.

Cutting carbon emissions

The Paris Climate Agreement has implemented a global action plan to keep the global temperature rise this century to well below 2 degrees Celsius.

Rise in renewable energy infrastructure/ storage batteries

Decreasing the world's dependence on fossil fuel increases dependence on minerals as it is estimated that renewable energy infrastructure requires at least double the amount of minerals for the same energy production level.

A 2017 World Bank Report highlights the potential impacts that low-carbon technologies will have on demand for many minerals and metals. Those expected to see heightened demand include: cobalt, copper, manganese, nickel and molybdenum. Exponential demand for electrical cars will put an enormous pressure on nickel-manganese-cobalt (NMC) batteries for example.

Declining land-based mineral resources & more expensive extraction

Meanwhile, the supply of land-based mineral resources is declining and they are becoming harder and more expensive to extract. Conventional mining deposits have been exploited for decades, if not centuries. The quality of ore on land is also declining, thereby increasing the amount of energy/water required for its exploitation. Responsible seabed mining has the potential to eliminate the worst performing land-based mines and reduce our footprint on this planet.

TSTD 'Patania' Tracked Soil Testing Device 'Patania' during a first expedition

GSR TAKES PART IN RELATED PROJECTS:

JPI OCEANS 2

PROJECT DURATION: 2019 – 2023
In 2015, the Joint Programming Initiative Healthy and Productive Seas and Oceans (JPI Oceans) organised a pilot project 'Ecological Aspects of Deep Sea Mining'. Three expeditions visited several nodule licence areas.

A follow up programme, JPI Oceans 2, recognised the need to study a test impact area performed by the envisaged deep sea mining technology. This will only be possible when 'Patania 2' goes on its first expedition in 2019. The European-funded follow-up study, also supported by the ISA, will provide a research vessel with deep sea science specialists on board to monitor the impact area using ROVs, AUVs and lander systems. Monitoring the plume created by the nodule mining aims to define the spatial extent and temporal behaviour of the generated sediment plume. The turbidity created will be monitored and the resettlement of particles measured by sedimentation traps. This will also enable the team to assess the tolerance of filter feeding organisms to particle concentrations. This will be an important milestone in the technical and environmental development process as GSR's technology will then be validated by independent external experts.

BLUE MINING

PROJECT DURATION: 2014 – 2018
DEME is one of the leading industrial partners in the European Blue Mining project. The overall objective is to provide breakthrough solutions for a sustainable, deep sea harvesting value chain.

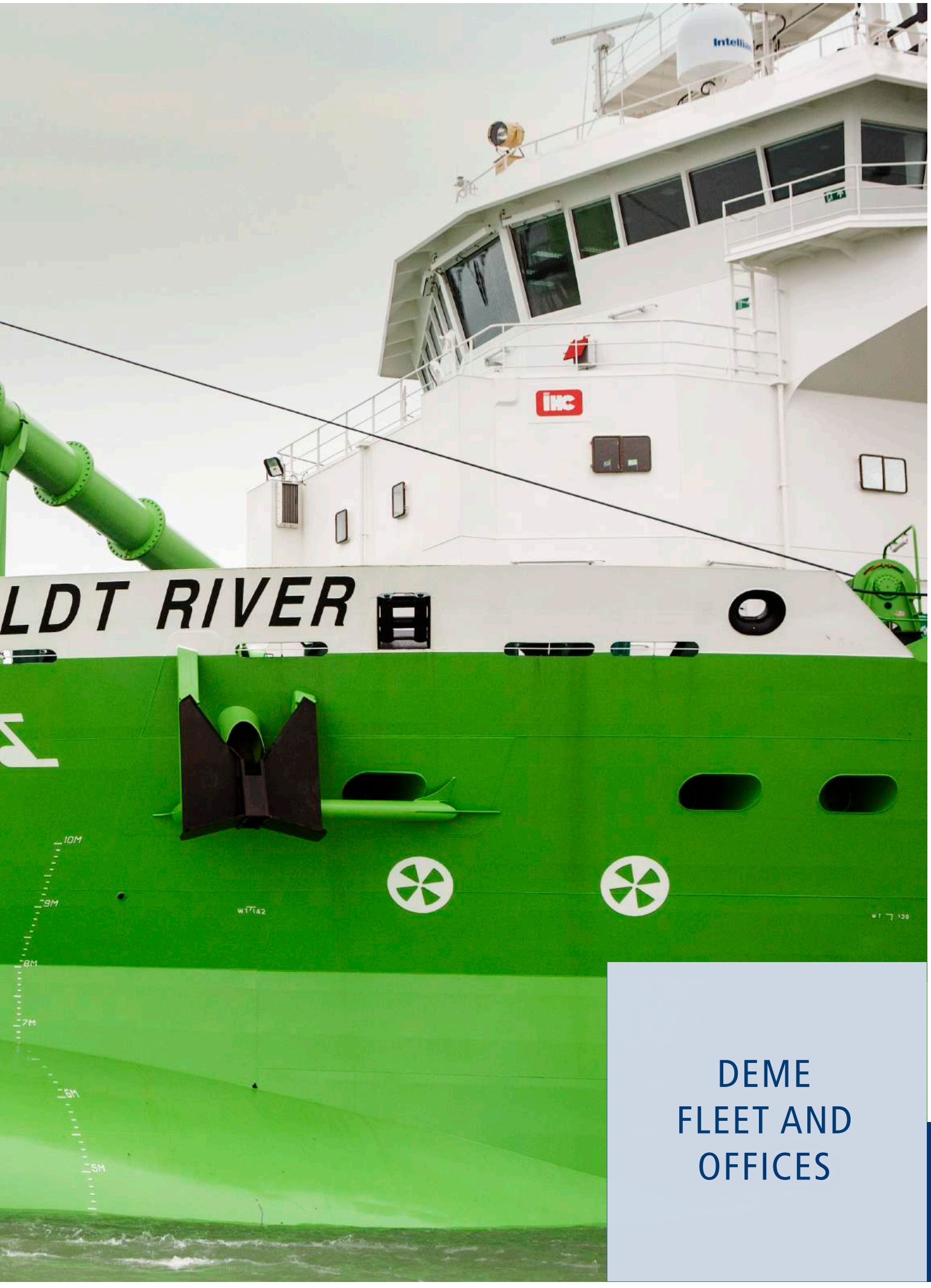
BLUE NODULES

PROJECT DURATION: 2016 – 2019
The European Commission led project examines 'Breakthrough Solutions for the Sustainable Harvesting and Processing of Deep Sea Polymetallic Nodules – Blue Nodules.'

JPI OCEANS
blue mining
bluenodules

TSTD ‘Patania’ was winched to a depth of 4,500 m


SCHE



DEME FLEET AND OFFICES

DEME fleet

DREDGING EQUIPMENT

TRAILING SUCTION HOPPER DREDGERS

DP/DT Congo River	30,190 m³
DP/DT Pearl River	24,130 m³
DP/DT Nile River	17,000 m³
DP2 Bonny River*, DF	15,016 m³
DP/DT Lange Wapper	13,700 m³
DP/DT Uilenspiegel	13,700 m³
DP/DT Breughel	11,796 m³
DP/DT Brabo	11,650 m³
DP/DT Breydel	11,296 m³
Antigoon	8,460 m³
DP/DT Scheldt River, DF	8,400 m³
Artevelde	5,580 m³
Marieke	5,600 m³
Reynaert	5,580 m³
Pallieter	5,320 m³
Charlemagne	5,000 m³
Victor Horta	5,136 m³
Atlantico Due	4,164 m³
Mellina	3,309 m³
Minerva, DF	3,500 m³
Orwell	2,575 m³

CUTTER SUCTION DREDGERS

Spartacus*	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
Vlaanderen XVI	1,786 kW
Seçkin	1,180 kW
Blanew	565 kW
Pixy	465 kW
Blani	458 kW

BACKHOE DREDGERS

Samson	4,124 kW
Pinocchio	2,416 kW
Peter the Great	1,964 kW
Zenne	805 kW

BUCKET LADDER DREDGERS

Adriatico	900 l
Bayard	300 l
Belgica	175 l

SELF-PROPELLED SPLIT HOPPERS

DI 68 & DI 69
Pantagruele
Sloeber & Pagadder
Vlaanderen VII & VIII

WATER INJECTION DREDGERS

Parakeet	2 x 6,207 m³/h
Dhamra	2 x 6,000 m³/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 m³
Zeeland	735 m³

Cutter suction dredger

Ameland	679 kW

Hopper dredgers

Grinza 6 and 7	646 m³

Barge unloading dredgers

Texel	1,193 kW
Vlieland	679 kW

Backhoe dredgers

IJburg	5 m³
VW9, VW47, VW55	1.5-3 m³

OFFSHORE EQUIPMENT

OFFSHORE INSTALLATION VESSELS

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

JACK-UP PLATFORMS

Buzzard	1,300 t
Vagant	1,000 t

FALLPIPE VESSELS

DP2 Flintstone	20,000 t
DP2 Seahorse***	18,000 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	2,500 t

ENVIRONMENTAL TECHNOLOGY

FIXED SEDIMENT RECYCLING CENTRES

Belgium

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

FIXED SOIL RECYCLING CENTRES

Belgium

GRC Kallo
GRC Bruges
GRC Zolder
Petit Try
Filterres
Cetraval

France

Extract-Ecoterres

United Kingdom

Hithermoor

MOBILE SEDIMENT & SLUDGE PLANTS

Mobile filter presses
Mobile immobilisation plant

MOBILE SOIL TREATMENT PLANTS

Mobile thermal desorption plant
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

FIXED RECYCLING CENTRES

The Netherlands

't Oost

* 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

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