

## GROUP PERFORMANCE

### FINANCIAL PERFORMANCE

#### Highlights income statement

##### Revenue

| <i>Revenue per division</i> (x EUR million) | 2018           | 2017           | Reported growth | Comparable growth <sup>1</sup> |
|---|----------------|----------------|-----------------|--------------------------------|
| Marine                                      | 1,085.9        | 947.3          | 14.6%           | 27.4%                          |
| Land  | 466.9          | 476.0          | (1.9%)          | 1.5%                           |
| Geoscience                                  | 97.2           | 74.1           | 31.2%           | 35.7%                          |
| <b>Total</b>                                | <b>1,650.0</b> | <b>1,497.4</b> | <b>10.2%</b>    | <b>19.2%</b>                   |

<sup>1</sup> Corrected for currency effect (of around - 4%) and for portfolio changes related to the divestment of the marine construction and installation activities in 2017

After three years of decline, group revenue increased again, mainly led by the Marine and Geoscience divisions. Marine revenue grew strongly thanks to global growth in Fugro's oil and gas related activities and an even larger growth in its offshore wind business, particularly in Europe and the

Americas. The comparable revenue growth of the Land division was driven by site characterisation, whilst asset integrity declined. Seabed Geosolutions executed more projects than last year.

| <i>Revenue growth 2018</i> | Organic | Exchange rate | Acquisitions | Disposals | <b>Total</b> |
|----------------------------|---------|---------------|--------------|-----------|--------------|
|                            | 19.2%   | (3.8%)        | –            | (5.2%)    | <b>10.2%</b> |

| <i>Revenue by region</i> <sup>1</sup> (x EUR million) | 2018           | 2017           | Reported growth |
|---|----------------|----------------|-----------------|
| Europe  | 631.4          | 581.2          | 8.6%            |
| Americas  | 383.0          | 334.9          | 14.4%           |
| Asia Pacific  | 364.7          | 303.1          | 20.3%           |
| Middle East and India                                 | 213.3          | 220.6          | (3.3%)          |
| Africa  | 57.6           | 57.6           | –               |
| <b>Total</b>  | <b>1,650.0</b> | <b>1,497.4</b> | <b>10.2%</b>    |

<sup>1</sup> By region of origin.

## EBIT

| <b>EBIT per division</b><br>(x EUR million) | 2018       |             |                             |             | 2017          |               |                             |               |
|---|------------|-------------|-----------------------------|-------------|---------------|---------------|-----------------------------|---------------|
|   | Reported   |             | Excluding exceptional items |             | Reported      |               | Excluding exceptional items |               |
|   | EUR        | Margin      | EUR                         | Margin      | EUR           | Margin        | EUR                         | Margin        |
| Marine                                      | 17.6       | 1.6%        | 21.1                        | 1.9%        | (56.5)        | (6.0%)        | (43.3)                      | (4.6%)        |
| Land  | 7.8        | 1.7%        | 10.0                        | 2.1%        | 15.7          | 3.3%          | 21.4                        | 4.5%          |
| Geoscience                                  | (16.6)     | (17.1%)     | (18.0)                      | (18.5%)     | (10.9)        | (14.7%)       | (10.2)                      | (13.8%)       |
| <b>Total</b>                                | <b>8.8</b> | <b>0.5%</b> | <b>13.1</b>                 | <b>0.8%</b> | <b>(51.7)</b> | <b>(3.5%)</b> | <b>(32.1)</b>               | <b>(2.1%)</b> |

EBIT (excluding exceptional items) improved strongly, driven by a significantly higher result of the early cyclical marine site characterisation business. The lower EBIT for the Land division is partly explained by a positive EUR 6.1 million one-off from a contractual settlement in 2017 and reduced

results in the asset integrity business due to lower revenues, partly resulting from poor weather conditions. In the Geoscience division, Seabed Geosolution's profitability was disappointing, due to project execution issues on two contracts, mainly in the fourth quarter.

| <b>Exceptional items by division</b> (x EUR million) | Marine       | Land         | Geoscience   | Total        |
|--|--------------|--------------|--------------|--------------|
| Restructuring costs                                  | (3.3)        | (2.7)        | (0.1)        | (6.1)        |
| Other  | (0.5)        | 0.5          | -            | -            |
| <b>EBITDA impact 2018</b>                            | <b>(3.8)</b> | <b>(2.2)</b> | <b>(0.1)</b> | <b>(6.1)</b> |
| Impairments  | 0.3          | -            | 1.5          | 1.8          |
| <b>EBIT impact 2018</b>                              | <b>(3.5)</b> | <b>(2.2)</b> | <b>1.4</b>   | <b>(4.3)</b> |
| EBITDA impact 2017                                   | (15.2)       | (3.5)        | (0.7)        | (19.4)       |
| EBIT impact 2017                                     | (13.2)       | (5.7)        | (0.7)        | (19.6)       |

## Finance costs

| <b>Finance income/(costs)</b> (x EUR million) | 2018          | 2017          |
|---|---------------|---------------|
| <b>Finance income</b>                         | <b>6.2</b>    | <b>5.4</b>    |
| Interest expenses                             | (40.2)        | (48.0)        |
| Net change in fair value of financial assets  | (0.2)         | 0.1           |
| Exchange rate variances                       | (18.6)        | (28.2)        |
| <b>Finance expenses</b>                       | <b>(59.0)</b> | <b>(76.1)</b> |
| <b>Net finance costs</b>                      | <b>(52.8)</b> | <b>(70.7)</b> |

The decrease in interest expense was mainly related to lower average interest rates following the early repayment of the United States private placement loans in 2017. The negative exchange rate variances of EUR 18.6 million were mainly the result of the devaluation of the Angolan Kwanza.



Fugro Geowing collects high resolution magnetic data, in order to detect unexploded bombs

### Share of profit/ (loss) of equity accounted investees

The share of profit in equity accounted investees of EUR 8.8 million (net of tax) mainly comprises the results of joint ventures, including with China Oilfield Services Limited, and Fugro's interest in Global Marine Holdings.

### Income tax gain/(expense)

The income tax expense was EUR 20.0 million compared to EUR 47.6 million last year. The decrease was mainly related to the recognition of previously unrecognised deferred tax assets of EUR 9.6 million in the current year based on improved future financial forecasts and a significant write down of deferred tax assets of EUR 16.4 million last year because of recoverability risk.

### (Gain)/loss on non-controlling interests

The EUR 4.1 million loss attributable to non-controlling interests is driven by the negative result of Seabed Geosolutions, partially offset by the profit of a subsidiary in the Middle East.

### Net result

| <b>Result</b> (x EUR million)                         | <b>2018</b>   | 2017           |
|---|---------------|----------------|
| EBIT  | 8.8           | (51.7)         |
| Net finance income/ (costs)                           | (52.8)        | (70.7)         |
| Share of profit/ (loss) in equity accounted investees | 8.8           | 4.7            |
| Income tax gain/ (expense)                            | (20.0)        | (47.6)         |
| (Gain)/ loss on non-controlling interests             | 4.1           | 0.3            |
| <b>Net result</b>                                     | <b>(51.1)</b> | <b>(165.0)</b> |
| Profit from discontinued operations                   | –             | 5.1            |
| <b>Net result including discontinued operations</b>   | <b>(51.1)</b> | <b>(159.9)</b> |

### Highlights balance sheet and cash flow

#### Working capital

| <b>Working capital</b> (x EUR million)         | <b>2018</b> | 2017    |
|--|-------------|---------|
| Working capital                                | 190.6       | 164.9   |
| Working capital as % of last 12 months revenue | 11.6%       | 11.0%   |
| ■ Inventories                                  | 29.3        | 30.5    |
| ■ Trade and other receivables                  | 537.4       | 477.0   |
| ■ Trade and other payables                     | (376.1)     | (342.6) |
| Days of revenue outstanding                    | 86          | 85      |

Continued good working capital management resulted in a working capital of 11.6% versus last year's 11.0%. Days of revenue outstanding were in line with 2017 as a result of timely billing and focused cash collection.

#### Capital employed

The slight increase in capital employed was mainly the result of an increase in working capital, partially offset by capex below depreciation and amortisation, and currency translation effects. Return on capital employed was marginally positive as a result of profitability improvements and controlled capex.



## Cash flow

| <b>Cash flow</b> (x EUR million)                                      | <b>2018</b> | 2017       |
|---|-------------|------------|
| Cash flow from operating activities before changes in working capital | 46.8        | 27.7       |
| Changes in working capital  | (34.1)      | (3.4)      |
| Cash flow from operating activities                                   | 12.7        | 24.4       |
| Cash flow from investing activities                                   | (46.1)      | (74.9)     |
| Cash flow from operating activities after investments                 | (33.4)      | (50.5)     |
| Cash flow from financing activities                                   | 64.6        | 53.6       |
| <b>Net cash movement</b>  | <b>31.2</b> | <b>3.1</b> |

Cash flow from operating activities after investments improved year-on-year, but was still negative due to increased working capital, in line with revenue growth. Excluding this working capital impact, cash flow from operating activities after investments was break-even, a significant improvement compared to 2017.

Cash flow from financing activities of EUR 64.6 million was mainly related to additional drawings under the revolving credit facility.

## Financial position

Excluding the impact of increased working capital, cash flow was break-even, a significant improvement compared to 2017. At year-end, working capital as a percentage of 12 months rolling revenue improved to 11.6% compared to 15.0% at the end of September and 11.0% at the end of 2017. The strong revenue growth resulted in additional working capital needs, which was the main reason that cash flow from operating activities after investments was negative. Strong cash collection in the fourth quarter resulted in 86 days of revenue outstanding, down from 91 days at the end of September and close to the level at the end of 2017 (85 days).

Net debt/EBITDA ratio improved to 2.2 compared to 2.5 in the previous quarter. Net debt amounted to EUR 505.5 million, compared to EUR 513.2 million at the end of September and EUR 430.4 million at the end of 2017. The year-on-year increase was caused by higher working capital resulting from strong revenue growth, devaluation of foreign cash balances and the accretion of interest on the convertible bonds.

At year-end 2018, the solvency ratio was 34.4%. To facilitate Fugro's growth and as a matter of prudence, an amendment on the solvency covenant requirement was agreed upon for the multicurrency revolving credit facility and certain lease arrangements with the owner of two geotechnical vessels, adjusting the requirement to >27.5% (instead of >33.33%) until maturity of the facility and for the remaining lease term.

## Foreign currency

As a result of fluctuations in average exchange rates during the year, the net foreign exchange effect in the profit and loss was EUR (18.6) million compared to EUR (28.2) million in 2017. This loss was for the largest part related to the devaluation of the Angolan Kwanza.

The currency translation difference related to foreign operations had a positive effect of EUR 5.2 million on equity per 31 December 2018 (31 December 2017: EUR 116.5 million). The majority of the translation difference relates to the US dollar and the British pound.

| <b>Exchange rates (versus Euro)</b> | <b>2018</b><br>Year-end | <b>2018</b><br>Average | 2017<br>Year-end | 2017<br>Average |
|-------------------------------------|-------------------------|------------------------|------------------|-----------------|
| US dollar                           | 0.87                    | 0.85                   | 0.84             | 0.88            |
| British pound                       | 1.11                    | 1.13                   | 1.12             | 1.14            |

## Outlook

The outlook across Fugro's market segments is positive as offshore wind, oil and gas and infrastructure markets continue to grow. The oil and gas market is recovering despite short term volatility related to geopolitical developments and concerns over reduced global economic growth. In the infrastructure market Fugro expects continued growth, driven by population growth and urbanisation. The high order intake in the last quarter of 2018, the solid backlog and latest market forecasts are supportive of the implementation of Fugro's strategic plan.

For 2019, Fugro expects continued revenue growth, further improvement of EBIT margin and positive cash flow from operating activities after investments. Capex is expected to be around EUR 90 million. The implementation of IFRS 16 is expected to have an upward impact of EUR 45 – 50 million on EBITDA and EUR 5 - 10 million on EBIT.



3D laser scanning of industrial facilities, Moerdijk, the Netherlands.

### Employees

At the end of 2018, the number of employees was 10,265, which is an increase of 221. The average number for the year was 10,155 (2017: 10,287), a decrease of 1.3%.

| <b>Employees by region</b> | <b>2018</b>   | <b>2017</b>   |
|----------------------------|---------------|---------------|
| Europe                     | 3,450         | 3,316         |
| Americas                   | 2,073         | 2,088         |
| Asia Pacific               | 2,209         | 2,076         |
| Middle East & India        | 2,235         | 2,108         |
| Africa                     | 298           | 456           |
| <b>Total (at year-end)</b> | <b>10,265</b> | <b>10,044</b> |
| <b>Total (average)</b>     | <b>10,155</b> | <b>10,287</b> |

# Autonomous operations

Over time a significant portion of our marine business can be optimised through the use of autonomous and remote technology. As technology allows, we are gradually directing our fleet towards more lightly manned, remotely operated and, in some cases, autonomous assets and today, Fugro has two unmanned surface vessels (USVs).

In 2018, Fugro signed a development agreement with L3 ASV to create the next generation of marine survey USVs. The first model will have several unique features, and its slender yet stable design will ensure high data quality, superior sea keeping and operational robustness. Initially she is to be used in two operational scenarios: one in combination with a regular survey 'mother' vessel, and another deployed independently from a wharf and controlled from shore. In the future she will also be operated fully autonomously.

Delivery of the first two new USVs, designed for coastal mapping and hydrographic survey applications, is scheduled for the second quarter of 2019.

## Client benefits

- Improved safety due to reduced offshore staff exposure.
- More efficient operations with faster data collection and delivery.
- More sustainable operations through a smaller environmental footprint than conventional marine survey operations.



SUSTAINABLE



SAFER



MORE EFFICIENT

## SUSTAINABILITY PERFORMANCE

### Social performance

#### Health & safety

Fugro is committed to providing a safe working place to its employees, contractors and clients, and focusing on health and safety is an integral part of Fugro's operational management. Fugro firmly believes that incidents can be prevented and has therefore implemented an organisation wide health, safety, security and environment (HSSE) management system, which defines Fugro's groupwide related objectives, standards and policies. Fugro continuously reviews potential areas of improvement and ensures thorough evaluation of every incident; all lost time incidents and high potential incidents are reviewed with a member of the Board of Management.

Fugro promotes visible leadership and a sense of responsibility throughout the organisation, in particular with respect to safety. Senior managers set and implement the relevant policies and procedures, decide on organisational objectives and priorities and lead by example. At the same time every single employee is personally responsible for his own, and his co-workers', safety and is authorised to speak up and stop the job if he or she feels a situation is unsafe.

Despite an improved safety performance, we highly regret that we had to report two fatal incidents in 2018. One person died as a consequence of a road traffic incident in the Netherlands while mobilising to a vessel, and in Brazil a person died in an incident during saturation diving activities. These tragic incidents demonstrate that the company must, and will, continue to work on its safety awareness and performance, and appeal to both senior management engagement and commitment but also to people's personal responsibility to safety.

To draw worldwide attention to safety following these tragic incidents, Fugro organised a company-wide safety stand down in December 2018. This included a video message from the CEO and brought large groups of Fugro employees together in office locations, vessels and other work environments. The aim of the stand down was to engage with all employees to consider health and safety in the context of their immediate teams and to discuss how they can collaboratively further improve HSSE.

This stand down is followed in the first quarter of 2019 by a company-wide safety culture assessment survey, seeking

input from all employees. The aim is to understand in detail what the current culture around safety is at all levels in the company, recognise and share best practices and learn from opportunities for improvements.

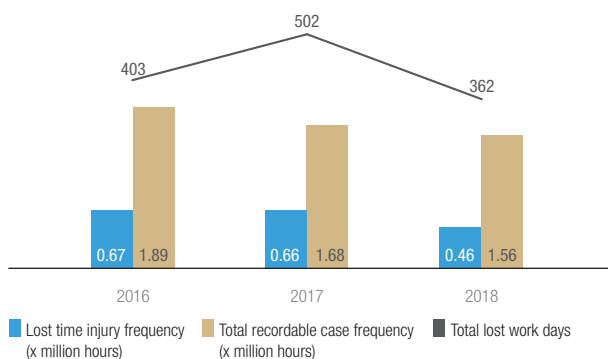
Key activities in 2018 included:

- A dedicated leadership excellence workshop for Fugro's senior managers started as part of Fugro's commitment to achieving health and safety excellence and improved performance. The workshop has been developed with the UK government agency Health and Safety Executive (HSE). To date, 230 of Fugro's senior managers have participated in this workshop, which will continue into 2019.
- Fugro concluded the roll out of the Managing Safely in Fugro (MSiF) 3 day classroom course for (middle-) management and supervisors accredited by the UK Institution of Occupational Safety and Health. By the end of 2018, those selected to attend the training since its introduction in 2015 have completed the course. Going forward, MSiF will be a mandatory requirement for new managers and supervisors, and will be periodically refreshed.
- A company-wide refocus on Fugro's 12 Golden Rules of HSSE was completed in the first quarter of 2018 with the aim of strengthening the understanding, awareness and compliance with the company's Golden Rules of HSSE at all its operations.
- A full review of all corporate HSSE standards was published in January 2018.
- Roll out of Fugro's safety leadership programme to enable everyone to become a safety leader in their own workplace. It involves a suite of tools to further support the safety culture on worksites by encouraging peer-to-peer discussions, involvement, engagement and personal ownership of safety on the worksite. In 2018 the programme was implemented in the full fleet of Fugro's owned and leased vessels and was adapted and rolled out for implementation on other worksites in both the Land and Marine divisions. The safety leadership tools are now further embedded throughout Fugro's operations and are part of the way the company operates.

Fugro's objective is to achieve safety indicators which are at least in line with the benchmark for the sectors in which it operates. The target for the key lost time injury frequency (LTIF) indicator is below 0.3 per million man hours worked.



### Safety performance metrics: lagging indicators



For Fugro this is a high bar, as a large number of its people work in general civil construction, where safety standards are lower than in the oil and gas industry. All Fugro operations are in accordance with both ISO 9001 and OHSAS 18001, or equivalent certifications.

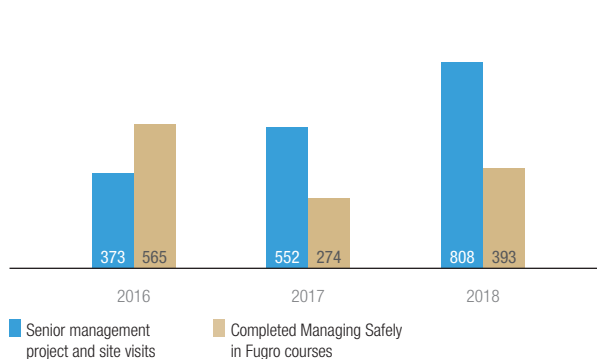
To continuously improve safety performance, it is essential that not only lagging but also leading safety metrics are monitored. The leading indicator 'senior management site visits' further improved and the number of participants of the 'Managing safely in Fugro' training increased again, with the initial target of required participants now being achieved.

While Fugro's HSSE efforts over the years have been effective, in recent years the rate of improvement has slowed down, in line with the industry wide trend. Together with industry partners and key clients this is being discussed in branche organisations such as IMCA and IOGP. Fugro is working closely with its key clients to harmonise and standardise its applied standards, approach and efforts related to safety in the workplace.

Fugro's commitment to health and safety and Fugro's performance continues to be recognised by external organisations, as evidenced by the various awards and client recognitions that Fugro and its employees received in 2018:

- At the 2018 British Drilling Association awards Fugro was recognised for its outstanding safety performance at the Sirius project site, reporting zero first aid case or worse incidents, despite continuous 24/7 working on open moorland, at times in wintry conditions.
- Fugro Marine in Aberdeen received the ROSPA Order of Distinction for an outstanding performance in health and safety at work over a period of 21 years.

### Safety performance metrics: leading indicators



- Fugro Hong Kong was honoured with two Safety Awards from the Labour Department: the 'Gold Prize' and the 'Best Performance'.
- Fugro in Rio de Janeiro received the Petrobras Award for the best service provider in ROV/AUV category in 2017. Fugro was recognised for consistently delivering a superior service in line with Petrobras' standards and expectations, demonstrating a well structured QHSE management system, strong governance processes and a reliable code of conduct.
- Fugro Egypt has been recognised by key client Shell with an award of recognition for excellent performance and adoption of safety leadership principles on a site survey offshore Egypt.
- Fugro Marine Malaysia has been recognised by Petronas for achieving a zero LTI performance in the 2018 upstream exploration activities.

### Life-long learning

Attracting, developing, retaining and engaging a diverse pool of talent is key to the success of Fugro. The internal Fugro Academy is instrumental in the further development of commercial, technical and management skills of employees at all levels in the company. Fugro Academy combines class room, on site and virtual training, and operates dedicated live marine training facilities. Over time, the range and depth of courses has continued to grow. Selected courses use external expert support. Since its inception in 2007, annual course completions have continually grown.

One of the 2018 highlights for Fugro Academy was the approval of its advanced hydrographic survey programme course by the International Board of Standards and Competence (IBSC) of hydrographic surveying. The IBSC sets the global standard for hydrographic surveyor



Analysing soil samples in one of Fugro's specialised laboratory, Wallingford, United Kingdom.

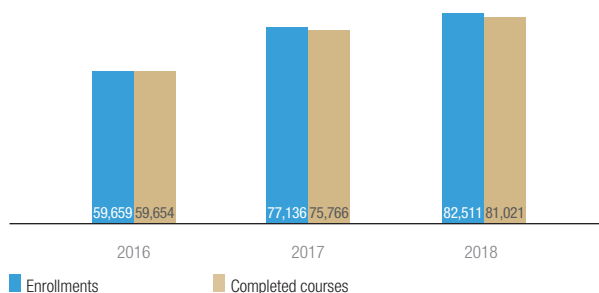
competence; the ability to train Fugro staff according to this standard is essential for many governmental contracts in the hydrography sector.

Another highlight was the establishment of the Marine Technology Centre of Excellence at the King Abdullah University of Science and Technology (KAUST) in Saudi Arabia, where Fugro Academy now has a presence providing a base for the training and development of Saudi nationals as part of Fugro's commitment to local knowledge development. For Fugro Academy, this culminated in the delivery of the first ROV pilot training course in the Kingdom, which also included the first female Saudi ROV pilot.

In 2018, Fugro Academy continued to support the roll-out of two major initiatives across the group: the mandatory Code of Conduct and Golden Rules of HSE e-learning courses. During 2018, in partnership with the global HSE team, Fugro Academy continued roll-out of the in class training of 'Managing safely in Fugro' and the 'Working safely in Fugro' e-learning courses. Fugro Academy also continued the supervisor's training programme. The Code of Conduct roll-out was developed together with the corporate legal department and represents a large scale e-learning programme deployed in 11 languages, to ensure the message and information reaches as wide an audience as possible. The roll out started in 2017 and reached over 90% of all employees in 2018. In 2018, 87% of Fugro's employees completed the Golden Rules e-learning course.

Overall utilisation of Fugro Academy learning and development remained high during 2018. Early in the year, the Fugro Academy reached the milestone of 500,000 courses since its inception in 2007.

### Fugro Academy statistics



### Talent development

Fugro is a service provider and working with motivated, engaged employees is critical to achieving its strategic objectives. Fugro aspires to be an employer of choice and is committed to employ talented staff and keep employee turnover limited. In 2018, 8% of Fugro's staff left the company out of their own initiative, unchanged compared to 2017.

Recruiting, developing and retaining talented and skilled experienced staff continue to be key challenges for Fugro's future. Relevant global human resources processes and practices continue to be developed and implemented to meet these challenges. To improve the impact of Fugro's specific tools for performance and personal development, Fugro successfully completed the implementation of its new cloud-based human resources system (Workday). All employees have real-time access to their relevant data, targets and organisational references, facilitated by personal dashboards and mobile environments. During the year, Fugro also developed a global career framework with a solid job architecture and common job titles to utilise as a



Fugro management presents Path to Profitable Growth strategy, November 2018

platform to further develop advanced reward and career programs. These improvements are important for management development, general business development and attraction and retention, especially of engineering, consulting and scientific staff, where Fugro faces strong competition.

Fugro Academy continued its leadership development programmes throughout the year, building upon the investment from previous years. Within the ‘Growing my’ series of leadership programmes, total delegate numbers over the past 4 years have by now exceeded 450, with a total of 26 programmes globally. During the year under review, 54 managers attended the junior, 55 the mid-level and 16 the senior level development programme. Evaluation of the effect of these programmes continues to show significant results across all levels of the organisation, in particular at junior management levels.

The international talent programme that was initiated in 2016 continued through 2018, with the first group completing their assignments, and moving into permanent positions in the organisation, and with a second group continuing their development journey. In December, a new type of leadership programme was piloted in support of Fugro’s innovation agenda, designed for talented innovation and research and development staff.

### Diversity and equality

Fugro values diversity and inclusion in all areas of its organisation. Diversity recognises and values the contributions of people with varying capabilities, experience and perspectives, including gender, age, ethnicity and religious or cultural backgrounds. Fugro believes that a diverse workforce is a key competitive advantage. The organisation’s success is a reflection of the quality and skills of its richly varied global talent base. Fugro is committed to provide fair terms and conditions of employment and provide equal opportunity for all. Recruitment of employees, evaluation, promotion, development, discipline, compensation, and termination decisions are based on qualifications, merit, and performance or business considerations.

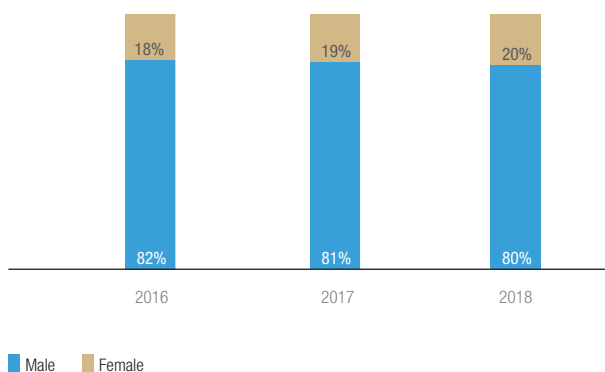
Fugro works across the globe and its office locations are predominantly staffed with local people, bringing Fugro benefits from knowledge of local business procedures, legislation and traditions. Internal systems are allowing staff at almost any location to benefit from information sharing through Fugro’s online systems and to collaborate with colleagues across the world. Key information and training materials are provided on a multi-lingual basis. Increasingly opportunities are being provided for international training and postings, which encourages interaction of staff from different backgrounds.

Fugro’s long standing culture is founded upon empowerment of its people in all work locations and the company is committed to having a workplace where there is mutual trust, respect for human rights and equal opportunity, and is free from inappropriate conduct such as bullying, discrimination, harassment and violence. In line with this company culture, Fugro’s human rights policy

formalises its responsibility under the Universal Declaration of Human Rights to respect human rights affected by its activities. The policy addresses principles such as diversity and non-discrimination, freedom of association, fair working hours, fair wages, protection of health and safety, no child labour and adequate grievance procedures. The company also seeks to foster similar standards in third parties that work for Fugro, or on its behalf, in line with the supplier and partner code of business principles. In 2018, together with leading industry partners, Fugro committed to the Building Responsibly Worker Welfare principles. Fugro endorses the ILO international labour conventions and the OECD Guidelines for Multinational Enterprises.

At 20%, the overall female representation was slightly higher than a year ago (2017: 19%). In management functions, female representation was 19% in 2018. The company's field operations work teams are still predominantly male. The company has the ambition to increase gender diversity at all levels of the organisation. In 2018, Fugro defined its groupwide diversity ambition as management recognised that future success depends on its ability to tap into the widest talent pool, which includes the increasing number of qualified and competent women across the world. Although the aim is to stimulate diversity in the broadest sense, there is a specific focus on attracting, retaining and advancing women at all levels of the organisation. Fugro also has specific diversity policies in place for the Board of Management and the Supervisory Board (see 'Corporate governance').

### Gender diversity



### Living wages

Fugro is committed to provide fair terms and conditions of employment, and equal opportunity for all. Recruitment of employees, evaluation, promotion, development, discipline, compensation, and termination decisions are based on qualifications, merit, and performance or business considerations.

Fugro has a large number of highly skilled employees. However, given Fugro's broad scope of operations and the wide range of countries that it operates in, there is a variety of roles that required closer assessment to confirm the basis for fair remuneration. For this reason Fugro conducted a living wage assessment during the year, using the benchmarks provided by the WageIndicator and Asia Floor Wage.

The results for the countries where the review has been concluded have indicated that fair remuneration was applied and living wage minima were respected.

Since Fugro operates in many countries where clear benchmarks are still lacking or where the economic situation is volatile and thus requires continuous monitoring, the review will be continued in 2019 and a regular monitoring of living wage developments will be conducted.

### Stakeholder engagement

Fugro values transparent engagement with its stakeholders, supports them with extensive information on performance and progress, and actively seeks their opinions and ideas through regular discussions and consultation. This includes various means of employee engagement, customer satisfaction surveys, management reviews with key customers, internal and external audits, meetings with shareholders, works councils, governments, local communities, and contacts with industry and research and development partners including a broad range of international universities and participation in standard setting organisations.

Apart from numerous client interactions in the course of normal business relations, leading up to Fugro's strategy update 'Path to Profitable Growth' Fugro has held extensive dedicated meetings and interviews with key clients, across the regions, market sectors and client types.

This engagement campaign was built on the global key account structure implemented in previous years. During 2018, dedicated senior resources ensured more focus on the quality and depth of client engagements.

In the year under review, Fugro management had 144 meetings with investors, which mostly took place after the publication of the full year and half year results. The majority of these meetings take place as ‘one-on-one’ meetings; the remainder as group presentations or conference calls.

**Interaction with Fugro's key stakeholders**

| Stakeholders   | Objective  | Relevance for Fugro   | Relevance for stakeholder   | Interaction  |
|--|--|---|---|--|
| <b>Customers</b>   | Customer satisfaction and loyalty  | Purchase services to support their projects   | Provision of high quality competitive solutions to support and de-risk their investment                                       | Work visits, exhibitions, periodical reviews with senior management (including members Board of Management), technology & innovation fairs |
| <b>Employees</b>   | Employee motivation, engagement and retention  | Essential for providing high quality services and continuity  | Good employer, satisfying work environment, development, adequate remuneration  | Intranet, collaboration tools, town halls, newsletters, quarterly bulletins, engagement surveys, performance appraisals, social media      |
| <b>Capital providers (shareholders, bond holders, banks)</b> | Communication on strategy, results, markets, opportunities and risks, engagement                                     | Access to capital markets   | Solid investment  | Annual general meeting, trading updates, bi-annual visits to main shareholders, investor conferences, capital markets day, website         |
| <b>Suppliers</b>   | Strong, reliable suppliers. Business relations in line with Fugro's supplier and partner code of business principles | Provide products and services required to perform company activities  | Having reliable customer/partner  | Negotiations and contracts, review meetings, supplier & partner code of business principles  |
| <b>Governments</b>   | Adherence to legislation, understanding new developments, good citizenship   | Setting local regulations and minimum requirements  | Support economic development and employment, promote R&D and sustainability   | Internet, trade missions, working groups   |
| <b>Universities</b>  | Recruitment of staff, joint R&D activities, good citizenship   | Source of potential employees with appropriate education, scientific know-how   | Potential future employer and provider of traineeships and practical experience   | Internet, social media, seminars, academic chair, Fugro sponsored scholarships and PhD's student, joint R&D projects                       |
| <b>Industry societies such as IMCA, IRO and NGOs</b>         | Exchange of knowledge, improvement of industry standards   | Setting national and international industry standards, science and technology exchange and supporting sustainable development | Partnership to secure and roll out industry standards, science and technology exchange and supporting sustainable development | Internet, company representatives on work committees, board positions, sharing of data (Seabed 2030)                                       |
| <b>Local communities</b>                                     | Good citizenship   | Societal support  | Support of local community  | Sponsorship events, engagement activities  |

Most of the community projects supported by Fugro are initiated by local entities, and range from voluntary work, sponsoring in kind to donations to local schools, sports clubs, care facilities and other charities.

In addition, Fugro seeks to preserve and promote accessibility to valuable culture, local heritage and nature, and supports many different initiatives around the world. In the Netherlands, Fugro is a sponsor of the world renowned Concertgebouw in Amsterdam, and also provides financial support to the Hermitage foundation in Amsterdam, the Mineralogisch-Geologisch Museum in Delft and the Hoge Veluwe national park (all in the Netherlands).

**Environmental performance**

Fugro is committed to contributing to a better environment. Fugro actively strives to limit the impact of its own operations on the environment, as a minimum by complying with environmental regulations for all its operations and where possible by further implementing solutions to reduce its environmental footprint. In addition, Fugro seeks solutions to ensure that the services it provides contribute to the least possible environmental impact of its clients' projects.

Fugro has strict groupwide guidelines for risk analyses, incident and accident investigation and reporting and prevention of incidents. Fugro operates according to environmental standards in all its activities. The requirements of ISO 14001 or similar standards have been integrated into almost all of Fugro's activities, which provides practical tools to manage the company's environmental responsibilities. Compliance audits are carried out, both internally and by external certification bodies and clients.

Fugro works as a service provider and consultant, therefore the impact of its operations is limited to the assets used for data acquisition, laboratories, transport and office environments. As Fugro does not own or operate any industrial assets or production facilities, the impact of its own operations have a relatively low impact on the environment. Fugro's environmental foot print is dominated by carbon dioxide emissions from its vessels, either owned or chartered, followed by road and air transport and thereafter the operation of office and laboratory environments.

The risks that Fugro's activities pose to the environment are largely related to possible small spills during execution of the data collection activities, be it on land or at sea. Land data

collection equipment such as drill rigs and cone penetration trucks are hydraulically powered and could pose a risk of spillage. Fugro's equipment is managed under appropriate pro-active maintenance programs and subject to periodical inspections including daily pre-start checks. Field teams are provided with spill kits and have been trained to capture, contain and clean any possible spillage during operations.

**Sustainable innovation**

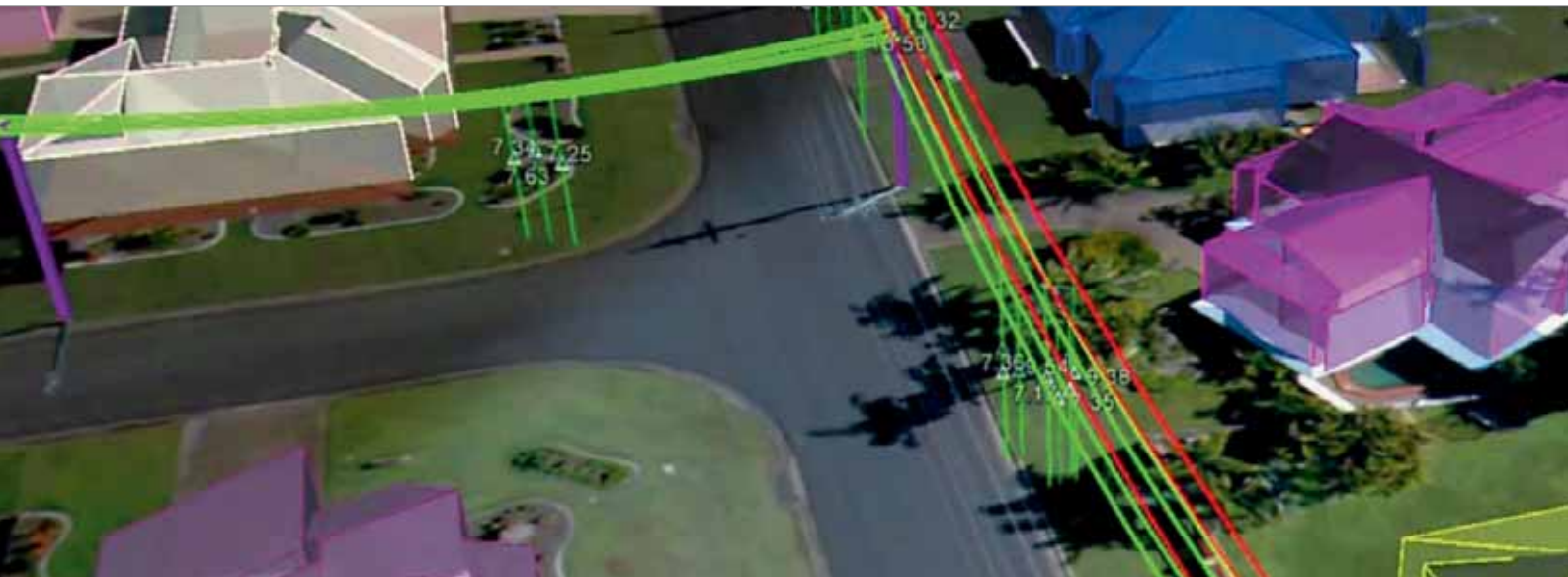
Fugro's leading market positions are supported by advanced technologies and methods in the majority of its work. Fugro differentiates by developing digital solutions and by changing the way its work, resulting in safer, faster, more efficient, higher quality and more sustainable delivery of projects. Innovation, and especially digitalisation, is a key strategic driver for Fugro to support long-term value creation. Furthermore it supports the provision of services for projects targeting renewable energy, the use of sustainable resources, mitigation of the impact of climate change, safe and environmentally sound development and operation of assets, longevity of assets leading to reduction of the environmental impact of renewal, and the sustainability of Fugro's own services.

The increasing drive to reduce fossil fuel consumption and carbon emissions is leading to growing investments in renewable energy around the world. With its technology, expertise and assets, Fugro plays an important role in the market for offshore wind and is growing its portfolio of services targeting renewable projects of clients. It also provides services to maintain the integrity of power distribution networks, amongst others required to deliver renewable power.

Fugro is also well positioned to provide innovative solutions for coastal protection, fresh water solutions and flooding related projects, combining geospatial and site characterisation data collection and advice.

Three important innovations during 2018 were the introduction of Gaia Insight, the opening of Fugro neXt remote operations control centre and the development of the next generation of autonomous vessels.

Gaia Insight is Fugro's online georisk platform, using cloud based solutions to assist in minimising ground risk, providing real time insight to client's into their projects. Gaia Insight has the ambition to digitise the whole subsurface and allow clients to access data beyond the standard project



Fugro's Roames analytics and visualisation tool enhances the management of power transmission and distribution networks.

perimeters supporting cost efficient decision making, providing the analytics required to lower ground risk and accelerate construction project schedules.

Fugro operates 6 remote operations centers, with more than 100,000 project hours of remote operations. By moving tasks and personnel from offshore to onshore, significant reductions in health and safety risk and environmental footprint are being achieved. In 2018, Fugro opened its first neXt remote operations center in Perth, Australia, from which it conducted its first commercial remote inspection, repair and maintenance project. In 2019, Fugro will upgrade its operations centers in Europe and America.

During 2018, Fugro concluded a partnership with L3 ASV in the United Kingdom for the development of the next generation unmanned surface vessels (USVs). Delivery of the first USV, designed for medium- to large-scale hydrographic survey applications, is scheduled for the second quarter of 2019. The USVs will be deployed from Fugro's dedicated survey vessels, simultaneously carrying out the survey. This will shorten project durations and project related risks and will reduce Fugro's carbon footprint.

Fugro has a global network of research and development centres which actively work on the development of innovations. Fugro's portfolio of innovations is managed globally. In 2018, Fugro spent around 2% of its revenue on research and development and technology innovation.

Over the years Fugro has built many successful relations and partnerships with scientific partners. A significant part of Fugro's technology is developed in close cooperation with its clients and joint research and development activities are

carried out with local universities and institutes across countries in which Fugro works.

Fugro maintains relationships with over 30 universities and other knowledge institutes across the globe. Examples are: Oregon State University, University of California, at Davis, Berkeley and Santa Cruz, Massachusetts Institute of Technology, University of Texas and Texas A&M University, University of Hawaii at Manoa (United States), University of Montpellier (France), Delft University of Technology, Maritiem Instituut Willem Barentsz Terschelling (the Netherlands), National University of Singapore, King Abdullah University of Science and Technology (KAUST) in Saudi Arabia, University of Western Australia and the Hong Kong University of Science and Technology and the University of Hong Kong.

Fugro established the Fugro Chair in Geotechnics at the University of Western Australia (UWA)'s Centre for Offshore Foundation Systems (COFS) within the Faculty of Engineering and Mathematical Sciences in 2014. UWA and Fugro have developed a sustainable research group that is significant to Fugro's activities worldwide. The Chair addresses key research questions related to design and performance within the field of offshore geotechnics, allowing Fugro to reduce risk and enhance engineering design within the offshore sector including renewable energy, solving relevant industry problems, while also supporting the wider geotechnical community. Fugro further funds a number of PhD scholarships at UWA. In May 2018, Prof Fraser Bransby was appointed to hold this Chair.

Fugro continues to contribute to industry advances through publications, and has published or was involved with publishing over 50 scientific papers in 2018.

Fugro continues to actively protect the intellectual property it develops. During 2018, 53 patents were filed.

| <b>Patent filings</b>            | 2016 | 2017 | <b>2018</b> |
|----------------------------------|------|------|-------------|
| Priority patent filing           | 18   | 17   | 11          |
| National/regional patent filings | 45   | 67   | 42          |
| Granted patents                  | 7    | 9    | 7           |

### Carbon footprint

Fugro promotes and undertakes projects to achieve emission reductions, especially focused on its vessels, as Fugro’s environmental foot print is dominated by carbon dioxide emissions from its vessels.

Fugro continues to benefit from its vessel renewal program of recent years. The young and modern powered dedicated vessels have a much lower emission than the older vessels they replaced. The positive effects are not directly visible in the overall output of the vessel carbon emissions, due to the increase of vessel activity following the upturn in the market in 2018. However, through its various reduction efforts Fugro has managed to keep the increase of emissions below the higher activity levels. Fugro continues to work on solutions to achieve significant reduction in emission levels in the mid to long term, amongst others by gradually reducing old tonnage and increasingly using remote solutions, such as deploying unmanned surface vessels.

In 2017, Fugro reported on carbon emissions of its own vessels scope 1 (direct emissions from the combustion of fossil fuels), with a total of 123 kilotonnes CO<sub>2</sub> equivalent. In 2018, following a 17% increase in operating hours of owned vessels due to higher activity levels, the CO<sub>2</sub> emission increased by 13% to 139 kilotonnes CO<sub>2</sub> equivalent. In 2018, Fugro also started to record the fuel consumption of leased vessels, with total emissions of 70 kilotonnes CO<sub>2</sub> equivalent, resulting in total vessel emissions of 209 kilotonnes CO<sub>2</sub> equivalent. Fugro intends to report on its full scope 1 emissions during 2019. Based on available data for 2018, the CO<sub>2</sub> of its road transport is around 5% of its total emissions.

Fugro continued with the ship energy efficiency management plan, incorporating best practices for the fuel efficient operation of ships, with more than half of Fugro’s owned vessels now using the Fugro Metocean Planner™.

This tool provides instant access to metocean statistics and weather window analysis, which serves Fugro or its clients with the most efficient route based on the most favourable weather and oceanographic conditions. It also includes the economic speed model pilot which advises the crew on the most favourable speed from an economic and emission control point of view, taking fuel consumption and subsequent emissions, vessel capabilities and the normal running cost of the vessel into account. In addition, Fugro’s vessels fully operate on low sulphur marine gas oil, ahead of the IMO 2020 global sulphur limit regulations.

Fugro also has continuous programmes focused on waste reduction and the adoption of other environmental initiatives, ranging from emissions monitoring to a focus on waste reduction. The Fugro food waste reduction programme was initiated in 2018, with a 20% reduction during the pilot. The programme will continue in 2019 with the ambition to achieve a similar reduction across the fleet.

### Compliance

#### Business ethics

Fugro is committed to conduct its business in an ethical and responsible manner. The company’s Code of Conduct, together with its underlying policies, helps employees to put Fugro’s values into practice. Together they provide practical guidance on how to conduct Fugro’s business ethically, comply with legal requirements and maintain Fugro’s good reputation.

The Code of Conduct addresses a variety of topics including non-discrimination, health and safety, drugs and alcohol, anti-corruption, conflict of interest and fair competition. It applies to all Fugro employees. Continuous efforts are made to convey the importance of the Code of Conduct and adherence with its contents and underlying policies.

Fugro’s speak up procedure forms an essential part of the company’s compliance programme and is available not only to employees and contract staff, but also to third parties with whom Fugro has a business relationship, such as customers, suppliers and agents. It offers multiple channels for reporting a suspected violation of the Code of Conduct and/or its underlying policies and outlines the subsequent internal investigation process which is supervised by Fugro’s corporate integrity committee (see below).



One of the channels for reporting a suspected violation is the Convercent reporting line; a web-based application which also offers reporters the opportunity to phone in reports in their local language. Convercent is available in over 30 languages 24/7. It offers reporters the opportunity to report anonymously should they so wish. The speak up procedure clearly stipulates that any party reporting in good faith is protected from any kind of retaliation. Webinars and guidance material on the speak up procedure was provided to managers and other staff to support them in promoting Fugro's values and to create a culture of transparency and respect, as well as to assist in promoting awareness of the (anonymous) reporting channels available as part of the speak up procedure.

In order to make the Code of Conduct, its underlying policies and the speak up procedure, easily accessible to all employees, the documents have been translated in the company's most relevant working languages. In 2017, Fugro commenced the roll-out of a new mandatory interactive e-learning course about the Code of Conduct, its underlying policies and the speak up procedure. The completion rate of all three modules of the Code of Conduct training exceeded the target of 90% of Fugro staff world-wide by the end of 2018.

Fugro has established a corporate integrity committee. This committee consists of the global director human resources, head internal audit and the chief compliance officer/general counsel, and reports to the CEO and CFO. It investigates concerns or allegations regarding a breach of the Code of Conduct and/or its underlying policies. If a violation is determined, the committee advises on the appropriate action, including the options of contract termination or dismissal. The committee monitors adherence to strict compliance with Fugro's no retaliation policy for any person making a good faith allegation.

In November 2017, Fugro introduced its supplier and partner code of business principles. This is aligned with the Code of Conduct and governs the obligations and relationship between any operating company and the third parties they work with, and the adherence to sound legal and ethical business practices. Fugro emphasises the use of this supplier and partner code as a means to actively engage with Fugro's suppliers and partners to ensure they work with similar values as Fugro.

In certain limited instances Fugro works together with commercial agents. In January 2018, Fugro introduced its procedure for commercial agents, resellers and distributors of services and similar third-party arrangements. All commercial agents are screened by an independent specialised third party at least every two years or more often as appropriate. The standard Fugro agency agreement includes clear compliance obligations, guidelines regarding fee arrangements, regular reporting requirements as well as audit rights. Any (renewal of an) agent agreement requires approval from the Board of Management whereby the maximum term of such agreement is two years. Any agent relationship is closely monitored and each agent has to sign a compliance declaration once a year.

### Compliance

Fugro is committed to adhere to the applicable laws and regulations in all countries where business is conducted. This commitment is embedded in all parts of the business through policies and training. To ensure compliance with EU/US imposed sanction programmes, the company has the strict mandatory procedure for certain areas in the world to obtain Fugro's Board of Management and general counsel/ chief compliance officer's approval prior to confirming an intention to tender, submitting proposals, entering into contracts or deploying resources.

Annually, an extended group of senior management worldwide has to fill out a declaration regarding compliance with the Code of Conduct and related policies. For the year 2018, 100% of these managers have submitted the signed form. Adherence to the Code of Conduct and its related policies and procedures, as well as the supplier and partner code of business principles, is also monitored by Fugro's internal audit department. The head of the internal audit department also plays an integral part in any investigation led by Fugro's corporate integrity committee.

Anticipating the implementation of the GDPR on May 25 2018, Fugro has implemented a new privacy program in 2017 and 2018. Fugro has performed a data inventory and mapping exercise, not only in the Netherlands, but also in Fugro's large European markets of Germany, the United Kingdom and Norway. The purpose of the exercise was among others to gather information and form a snapshot view of the data flows for each of the key business processes in scope and to understand how Fugro collects,



*Launch of Fugro's Seacalf system to identify soil composition via cone penetration testing.*

uses, and shares personal data. Fugro's GDPR programme's main objective is to continuously create awareness of the new principles and obligations as set under the GDPR. In this respect, Fugro has developed a data privacy awareness campaign and GDPR compliance package for all Fugro's operating companies and its employees.

**Tax policy**

Fugro's global presence exposes the company to various complex tax jurisdictions and tax systems. These systems are increasingly under development following global initiatives from individual countries and organisations such as the OECD and the European Union, and the societal debate leading to these developments is still ongoing. Other developments arise from the economic environment. As tax is a crucial component of the financial budget of national jurisdictions, economic developments have a direct impact on the way fiscal regulations are designed and upheld.

Fugro believes a responsible approach to tax is an integral part of doing business sustainably. The company recognises that tax is an integral part of doing business and that it is both a cost of doing business, as well as a contribution to the countries in which it operates. Tax effects are one of the components in the commercial process, but only legitimate business considerations are driving final decisions.

The tax strategy, which can be found on Fugro's website, supports the company's business strategy by providing value to the group through delivery of high quality tax services within boundaries of legal and tax frameworks. The strategy has been approved by Fugro's Board of

Management and the audit committee of the Supervisory Board. The global tax department is equipped to support Fugro's global activities in an effective and compliant manner. It is complemented by an extended tax function, represented by professionals across finance, business, procurement and human resources. This alignment is part of the integrated control framework. Fugro's audit committee reviews, at least once per year, the tax strategy including financial impact, valuation of deferred tax assets, compliance and tax implications of any acquisition or divestment. Based on its risk based audit plan, the internal audit department monitors tax compliance and controls. External support is provided by a reputable network of external tax advisers that strictly follow their professional standards. Fugro's values and compliance with Fugro's Code of Conduct are leading when managing Fugro's tax affairs.

The broader tax strategy is summarised in a set of global tax principles, which can be found in Fugro's website, and which illustrate good corporate practice in the areas of tax management and transparency.

## OVERVIEW IMPORTANT CONTRACT AWARDS

### EUROPE

**Germany** – Fugro has undertaken a complex geotechnical project for TenneT's high capacity grid. The contract involves detailed site characterisation services for a 38-kilometre-long section from Husum to Niebüll; another 46-kilometre-long section was investigated by Fugro in 2017. The new 'west coast line' is an important energy project, transporting wind power from Germany's west coast to the south of the country.

**Germany** – Fugro has won a marine site characterisation programme at Iberdrola's Baltic Eagle offshore wind farm, in the Baltic Sea. It relates to an UXO (unexploded ordnance) survey to clear the sites, followed by a geotechnical investigations, including laboratory testing. The data will inform the design of the foundations for the wind turbines and offshore substation.

**Norway** – Fugro has been awarded a hydrographic survey of approximately 14,500 square kilometres by the Norwegian Hydrographic Service. It is part of the MAREANO seabed mapping programme. Fugro has successfully completed numerous surveys for the programme since 2006.

**The Netherlands** – Following earlier geophysical surveys, Fugro continued its site characterisation of the Hollandse Kust Noord wind farm zone with geotechnical investigations, laboratory testing and development of an integrated soil model which will be used by future developers to prepare their bids. In 2017 an earlier contract with the Netherlands Enterprise Agency saw Fugro complete a geophysical survey of the area to map the position of existing cables and pipelines.

**The Netherlands** – Fugro was awarded a five-year contract for roadway pavement condition assessment services with the Ministry of Transport. Detection of pavement surface degradation and surveying of roadway geometry, using Fugro's proprietary automatic road analyser. The contract includes the inspection of around 9,000 kilometres of highway each year allowing the client to optimise its road maintenance programs.

**United Kingdom** – Reaffirming its market-leading position in the UK North Sea ROV inspection market, Fugro has attracted seven new clients for its IRM services in 2018. Recent work includes significant pipeline and structure inspections for Centrica Storage, Chrysaor, Dana, Petrofac, Premier, Repsol and Spirit Energy. Work scopes also include light repair, maintenance and decommissioning.

**United Kingdom** – In July, Fugro was awarded site characterisation work on the High Speed 2 Rail Project for the ALIGN consortium, as part of design and construction preparation works for Phase 1 of this high-speed rail network, directly linking London, Birmingham, Leeds, the East-Midlands and Manchester. Fugro geoscientists will apply advanced techniques to determine ground strata and engineering properties to help optimise tunnel and foundation design.

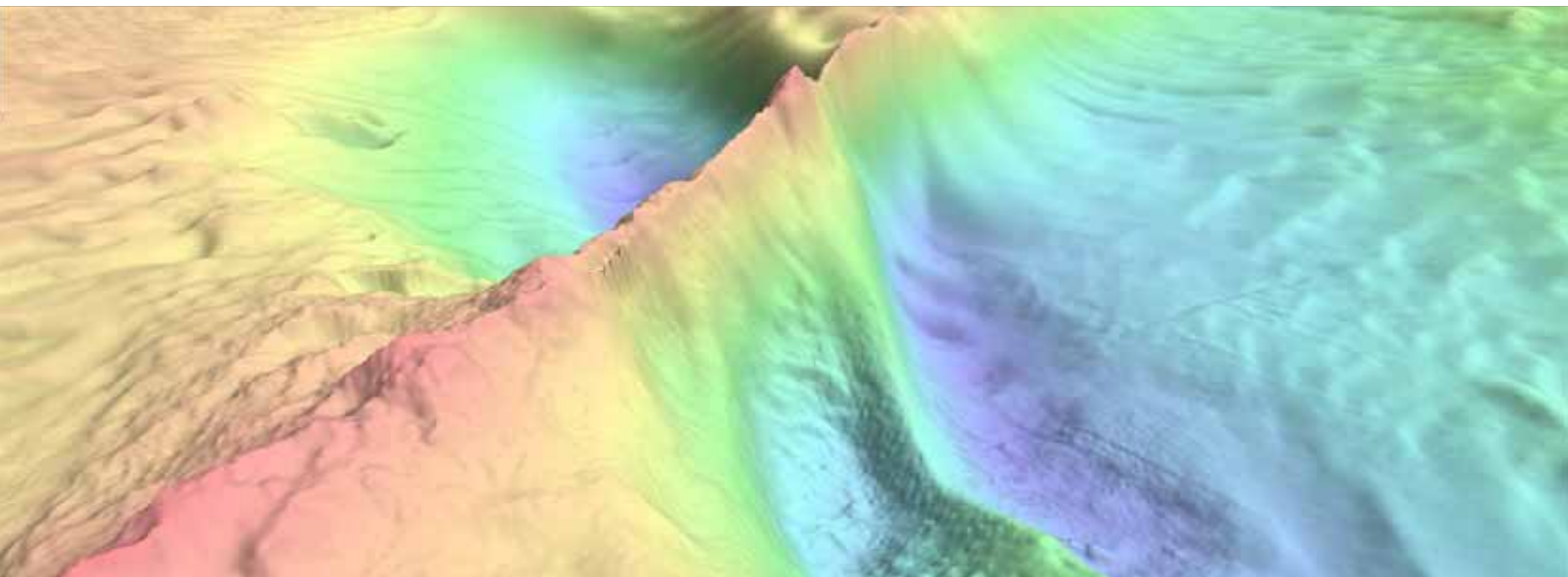
**United Kingdom** – Fugro has commenced site characterisation work at the Hornsea Two wind farm site. The contract, awarded by Ørsted, covers geotechnical site investigation and follows earlier contracts for geophysical services at the same site. The data will support the development of the ground model, assist design activities for the turbine foundations and inform cable route design at the Hornsea Project Two and Three sites. Since 2016 Fugro has also carried out several marine site characterisation contracts at Ørsted's Hornsea One site.

### AMERICAS

**Brazil** – Fugro is providing remotely operated vehicle (ROV) services to support Petrobras in its exploration and production activities. The two new contracts see Fugro's ROV spread working round-the-clock to support drilling related activities, such as towing, mooring, commissioning and de-commissioning, and positioning of production and drilling. The ROVs are being deployed in water depths of 3,000 metres.

**Brazil** – For TGS, Fugro has been executing a large hydrocarbon seep survey (detection of leakages from active oil and gas reservoirs) in the Campos and Santos basins. The program covers around 200,000 square kilometres, and follows similar programs in the Gulf of Mexico. The survey is targeted at reducing the client's exploration cost and risk, by improved identification of viable reservoirs.

**Canada** – Fugro has successfully completed the geophysical acquisition portion of a 2018 Carson Basin seep survey programme, covering an area of 18,875 square kilometres in water depths from 300 to 3,300 metres in this frontier region offshore Newfoundland. From its deepwater survey vessel, Fugro Searcher, Fugro acquired data which were used to interpret geologic features and optimise target selection for geochemical sampling and heat flow measurements.



3D model of seafloor with colours indicating water depth, UK sector of the North Sea

**Cayman Islands** – Fugro completed the data acquisition phase of a hydrographic survey project designed to update the nautical charts of Grand Cayman and Cayman Brac. Fugro mobilised two survey launches equipped with multibeam sonar suites to capture seabed bathymetry data; tidal observations and tidal stream measurements were also collected. Updating the charts will support safe navigation, improving access for trade and tourism related industries and enabling a wider range of ships to call safely at the islands.

**Guyana** – As during the previous three years, in 2018 Fugro continued its high level involvement with key players exploration programs in the site characterisation space and in particular for ExxonMobil Liza 2, Hammerhead and Payara development programme. Geotechnical and environmental sampling was also executed for Repsol Guyana and a coastal hydrographic program was conducted for the Guyanese government.

**Trinidad & Tobago** – Fugro has won three contracts with BHP Petroleum (Deepwater) Inc. Within Trinidad’s Block 3(a), Fugro is providing geophysical and geotechnical services to support the development of the Ruby field. Fugro will conduct seismic surveys, seabed clearance and shallow hazards surveys. For the geotechnical investigations, the work scope includes drilling, laboratory analysis and engineering reporting. The operations commenced in June and will continue until May 2020.

**USA** – Fugro has executed its first project supporting deep sea mining of polymetallic nodules; concretions enriched in nickel, copper, cobalt, metals and non-metals important for electric vehicles and wind energy production. In the eastern Pacific Ocean, a specialist marine geoscience team performed detailed site characterisation surveys, for seafloor mineral exploration company Nauru Ocean Resources, a subsidiary of DeepGreen Metals Inc.

**USA** – Seabed Geosolutions has been awarded a series of 4D ocean bottom node seismic monitoring surveys over multiple oil and gas fields in the U.S. Gulf of Mexico. At a later stage, Seabed secured an extension of the contract, increasing the total duration to around five months.

**USA** – 2018 saw a host of geophysical and geotechnical contract awards for offshore wind farms from Ørsted for Bay State (Massachusetts), Ocean Wind (New Jersey), Deepwater Wind for Skipjack (Maryland) and Revolution (Rhode Island) wind developments.

**USA** – An American energy company contracted Fugro for the inspection and analysis of power lines, hosting the data on Fugro’s cloud based Roames platform. The purpose of the project is to provide data collection and data interpretation services to support a vegetation management analysis for the client covering a four state area (Louisiana, Texas, Arkansas, Mississippi).

**AFRICA**

**Nigeria** – In 2018 Shell undertook maintenance activities at its SPM buoy at the Bonga field necessitating oil tankers to temporarily tandem-moor at the FPSO. To aid the tanker pilot in safely executing this operation, Shell contracted Fugro to deliver an advanced monitoring and advisory tanker offloading system. Using Fugro’s NorthStar integrated software, the existing monitoring system was upgraded to accurately measure wind, current and wave forces, to detect squalls in the wide vicinity and provide advisory warnings, to monitor mooring hawser tension, and to accurately report tanker and FPSO position, velocity and separation distances. The real-time data was amongst others displayed on PCs on a portable hand-held tablet for the tanker pilot, and on Fugro’s web-server for off-site staff.

**Madagascar** – Nearshore site characterisation work for the expansion of the Toamasina Port, Madagascar’s largest commercial seaport. Funded by the Japanese International Cooperation Agency (JICA), this project supports the design and construction of new quays to accommodate the future increase in container cargo vessels through the port.

**Mozambique** – Fugro has started the mobilisation of equipment and personnel to Northern Mozambique for further in-depth studies of the marine site conditions. Fugro has accompanied ENI since 2014 in several campaigns. The contract includes an extensive metocean campaign to define the currents along the continental shelf, additional geotechnical and geophysical data acquisition, processing and integration into the ground model that will be required for the construction phase of the project.

#### MIDDLE EAST AND INDIA

**Saudi Arabia** – Fugro is providing on and nearshore site investigation services for the design and engineering phases of the “Pristine” tourism development. Fugro’s services support the feasibility and design phase for this mega-resort, built across a lagoon of 50 islands situated between the cities of Umlaj and Al-Wajh.

**Saudi Arabia** – Seabed Geosolutions has been awarded a significant 3D ocean bottom node survey in the Red Sea. The S-79 project will require the acquisition and processing of high quality 3D data over a large area in various water depths. Seabed’s Manta® nodes will be used. The contract will be jointly executed and shared with Seabed’s partner in the Middle East ARGAS, who is the contract holder.

**Qatar** – Under a five year call-off contract for Qatargas, Fugro is providing underwater inspection, geotechnical and geophysical services for its offshore LNG operations. Utilising its survey vessel Fugro Proteus, Fugro will undertake geophysical and environmental services and ROV inspection of subsea assets.

**UAE** – Fugro completed an extensive programme of surveys for Bechtel as part of the Hail and Ghasha gas field development, a landmark project for the Abu Dhabi National Oil Company (ADNOC). In order to meet the fast track schedule Fugro mobilised specialised equipment, including multiple elevating platforms for geotechnical work and on site crew accommodation.

#### ASIA PACIFIC

**Indonesia** – Fugro has provided significant, comprehensive geophysical, geotechnical, and metocean survey and geohazard analysis services, for ENI’s Merakes development project in the East Sepinggan Block, offshore East Kalimantan. The field is located in 1,500 metres water depth, 35 kilometres southwest of the Jangkrik floating production unit.

**Australia** – In order to remotely assess the condition of Western Power’s complete 75,000-kilometre electricity network, Fugro was awarded a three-year contract for its Roames solution. Roames combines cutting- edge remote sensing technologies with cloud computing and machine learning algorithms to deliver a complete and accurate, real-world, digital twin. It will provide asset condition and vegetation clearance analytics, helping Western Power to optimise its maintenance programmes.

**Australia** – Fugro has won a contract to collect seafloor data for the Office of Environment and Heritage, on behalf of the New South Wales Government. This information will enable councils, scientists and government agencies to better understand nearshore processes and the structure and range of habitats on the seafloor.

**Papua New Guinea** – Total awarded Fugro site investigation services in support of its infrastructure development for the Elk-Antelope field, in preparation for future LNG developments. The one-year contract encompasses site investigation work, including onshore drilling, CPT, geoconsultancy and laboratory testing work to deliver a ground risk model for optimal foundation design.

**Taiwan** – Fugro was awarded two offshore wind farm projects by Jan De Nul N.V., to aid detailed foundation design for the first two pilot demonstration wind farms in the country. Over 4,000 metres of soil intelligence data was collected over a period of close to 60 fieldwork days. The highly efficient and safe operational performance enabled Jan De Nul to start with the foundation designs quicker than anticipated.

**Tuvalu** – Fugro has been awarded a contract by the United Nations Development Programme to survey the Polynesian island. With its low lying islands, Tuvalu is very vulnerable to the effects of climate change. The survey will result in accurate coverage of shallow, nearshore and lagoon bathymetry and island topography, to support the island’s infrastructure development, natural resource management and environmental monitoring needs.