



**OFFSHORE**

ENERGY. COMMITTED.



# ANNUAL REPORT 2019

All incidents with an actual or a potential consequence for the Health, Safety and Security of personnel and/or impact on the environment arising out of Company's activities are investigated. Investigations, based on the type, criticality and severity of the event, are performed by specifically identified personnel using methods amongst which TapRoot® and 5 Why. The Company also reports incident data from contractor's construction facilities if the incident is related to an SBM Offshore project.

Safety incidents are reported based on the incident classifications as defined by the IOGP Report 2018 – June 2019. Health incidents are reported based on the occupational illnesses classification given in IOGP Report Number 393 – 2007.

The Company uses records of exposure hours and SRS data to calculate Health and Safety performance indicators set by SBM Offshore.

## 5.2.2 ENVIRONMENTAL REPORTING

### OFFSHORE

In accordance with the IOGP and IPIECA guidelines, SBM Offshore reports on offshore units using the following reporting boundaries:

- Units in the Company's fleet producing and/or storing hydrocarbons under Lease and Operate contracts
- Units in which the Company exercises full operational management control

SBM Offshore considers 'operational management control' as: having full authority to introduce and implement operating policies at the operation, in line with the IPIECA definition.

The environmental and process safety performance of the Company is reported by region or management area: Brazil, Angola, North America & Equatorial Guinea. Based on the criteria stated above, SBM Offshore reports on the environmental and process safety performance for the following 12 units:

- Brazil – FPSO *Espirito Santo*, FPSO *Capixaba*, FPSO *Cidade de Paraty*, FPSO *Cidade de Anchieta*, FPSO *Cidade de Ilhabela*, FPSO *Cidade de Marica*, FPSO *Cidade de Saquarema*
- Angola – FPSO *Mondo*, FPSO *Saxi Batuque* and FPSO *N'Goma*
- North America & Equatorial Guinea – FPSO *Aseng*
- Asia – FPSO *Kikeh*

The environmental offshore performance reporting methodology was chosen according to the performance indicators relative to GRI Standards and IOGP guidelines. This includes:

- Greenhouse Gases, referred to as GHG which are N<sub>2</sub>O (Nitrous Oxide), CH<sub>4</sub> (Methane) and CO<sub>2</sub> (Carbon Dioxide)
- GHG emissions per hydrocarbon production from flaring and energy generation
- Non Greenhouse Gases which are CO (Carbon Monoxide), NO<sub>x</sub> (Nitrogen Oxides), SO<sub>2</sub> (Sulphur Dioxide) and VOCs (Volatile Organic Compounds)
- Gas flared per hydrocarbon production, including gas flared on SBM Offshore account
- Energy consumption per hydrocarbon production
- Oil in Produced Water per hydrocarbon production

SBM Offshore reports some of its indicators as a weighted average, calculated pro rata over the volume of hydrocarbon production per region. This is in line with the IOGP Environmental Performance Indicators.

### ONSHORE

SBM Offshore reports on its onshore scope 1, 2 and 3 emissions<sup>34</sup>. As indicated in the 2018 Annual Report, efforts have been made in 2019 to further mature onshore emissions reporting to extend the reporting scope to include all locations in operational control by SBM Offshore. In 2019, the reporting scope includes all locations where the headcount is over 10 and yards over which the Company has full operational control. This scope has been extended from that used previously; due to improved reporting and data quality, the Company can now report onshore emissions on more locations. There is no revision of the 2018 data however, as there was no data for the locations added in the scope in 2019.

Next to this, the Company has started reporting both the 'location-based approach' as well as the 'market-based approach' for its scope 2 emissions. This is related to the SDG target on percentage of renewable energy used in the offices set in place in 2018. These changes did not result in a change of the reported emissions over 2018 as for 2018 only information on the location-based approach is available. SBM Offshore reports onshore emissions data for the following locations: Amsterdam, Houston, Kuala Lumpur, Marly, Monaco, Rio de Janeiro, Schiedam, Shanghai, Carros lab, Canada Shorebase, Georgetown Shorebase, Luanda Shorebase, Malabo Shorebase, Rio Shorebase, Santos Shorebase, and Vitória Shorebase. The Singapore office is excluded as we have no visibility on energy breakdown usages as the energy is included in the lease.

<sup>34</sup> The World Resources institute GHG Protocol Corporate Standard classifies a company's GHG emissions into three 'scopes'. Scope 1 emissions are direct emissions from owned or controlled sources. Scope 2 emissions are indirect emissions from the generation of purchased energy. Scope 3 emissions are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

## 5 NON-FINANCIAL DATA

The Company reports on scope 3 emissions related to business flights. This consists of all flights invoiced and paid for via our standard travel system in 2019 and the data covers all operating companies. The GHG emissions relating to business flights are based on third-party documentation on distances, the conversion to CO<sub>2</sub> - equivalent is based on CO<sub>2</sub>emissiefactoren.nl. There are two ways of calculating flight related emissions: including or excluding the additional impact of CO<sub>2</sub> when emitted at high altitude. Unlike the 2018 report, this year the Company is calculating scope 3 emissions using emissions factors that include the additional impact of CO<sub>2</sub> when emitted at high altitude for all flights. This methodological change as well as an increase in amount of flights, have caused a significant increase in flights related GHG emissions compared to 2018.

For the onshore electricity usage, the Company uses the World Resources Institute Greenhouse Gas Protocol (GHG Protocol) method and conversion factors to calculate CO<sub>2</sub> equivalents. For fuels the Company uses conversion factors published by the UK government's Department for Environment Food & Rural Affairs (DEFRA). CO<sub>2</sub> equivalency is a quantity that describes, for a given mixture and amount of greenhouse gas, the amount of CO<sub>2</sub> that would have the same global warming potential (GWP), when measured over a specified timescale (generally, 100 years).

### ATMOSPHERIC EMISSIONS

The calculation of air emissions from offshore operations units uses the method as described in the EEMS-Atmospheric Emissions Calculations (Issue 1.810a) recommended by Oil & Gas UK. SBM Offshore uses the GHG Global Warming Potentials from the Fourth Assessment Report issued by the Intergovernmental Panel on Climate Change (IPCC).

Emissions reported in the Company records include:

- GHG emissions for the production of energy. Records of GHG emissions from steam boilers, gas turbines and diesel engines used by the operating units.
- GHG emissions from gas flared. Flaring events accountability is split into either client or SBM Offshore: 'SBM Offshore Account' is flaring resulting from unplanned events. Whereas client account is flaring resulting from events caused by the client or planned by SBM Offshore in agreement with the client.
- GHG emissions from flights. Scope 3 emissions are calculated using distances and third-party emissions factors.
- GHG emissions for onshore operations are reported using the market-based and location-based approaches.

Identifying the causes of flaring for which SBM Offshore is responsible and acting on these events is part of the continuous improvement process.

### OFFSHORE ENERGY CONSUMPTION

The energy used to produce oil and gas covers a range of activities, including:

- Driving pumps producing the hydrocarbons or re-injecting produced water
- Heating produced oil for separation
- Producing steam
- Powering compressors to re-inject produced gas
- Driving turbines to generate electricity needed for operational activities

The main source of energy consumption of offshore units is Fuel Gas and Marine Gas Oil.

### OIL IN PRODUCED WATER DISCHARGES

Produced water is a high volume liquid discharge generated during the production of oil and gas. After extraction, produced water is separated and treated (de-oiled) before discharge to surface water. The quality of produced water is most widely expressed in terms of its oil content. Limits are imposed on the concentration of oil in the effluent discharge stream (generally expressed in the range of 15-30 ppm) or discharge is limited where re-injection is permitted back into the reservoir. The overall efficiency of the oil in water treatment and as applicable reinjection can be expressed as tonnes of oil discharged per million tonnes of hydrocarbon produced.

Incidental environmental releases to air, water or land from the offshore operations units are reported using the data recorded in the SRS database. SBM Offshore has embedded a methodology for calculating the estimated discharge and subsequent classification within the SRS tool.

### Changes in reporting

In 2019, SBM Offshore chose to no longer report spills according to the GRI indicator previously used, GRI 306-3: Effluents and waste. The Company feels that 'oil in produced water' is a more relevant indicator for our water pollution as the levels of discharge are significantly higher than of oil spills and the data is of higher quality. Oil spills are still reported in other sections of the report.

### DATA REVISIONS

The offshore environmental data has been revised due to an improved scoping methodology implemented in 2019. The parameter 'Units in which the Company has full ownership or units that are jointly owned and where the Company has at least 50% ownership' was removed and scoping is now solely based on operational control, as is common in this industry. SBM Offshore considers operational control as: having full authority to introduce

and implement operating policies at the operation. This scoping update results in Kikeh being included in the offshore emissions reporting scope. In accordance with the GHG Protocols and to facilitate comparability of the data, we have revised the environmental data reported in 2018 to reflect the new scope.

Using this new scope, the 2018 figures would have been as follows:

#### Revised Data for 2018

	2018 Annual Report	Revised 2018 Annual Report
Number of offshore units (vessels)	13	14
SBM Offshore Production		
Hydrocarbon Production (tonnes)	52,207,616	53,883,020
Energy Consumption		
<b>Total Energy Consumption<sup>1</sup></b>	<b>58,033,793</b>	<b>62,085,490</b>
<b>Emissions – Offshore</b>		
GHG Scope 1		
Carbon dioxide (CO <sub>2</sub> ) in tonnes	4,764,227	5,284,570
Methane (CH <sub>4</sub> ) in tonnes	10,132	12,072
Nitrous oxide (N <sub>2</sub> O) in tonnes	295	320
<b>Emissions – Onshore</b>		
GHG Scope 1 <sup>2</sup>	194	194
GHG Scope 2 <sup>2</sup>	3,880	3,880
GHG Scope 3 – Air travel	17,529	17,529
<b>Flaring</b>		
Total Gas Flared per production <sup>3</sup>	9.81	11.45
Gas Flared on SBM Offshore account per production <sup>3</sup>	3.70	3.98
Proportion of Gas Flared on SBM Offshore account	38%	35%
<b>Other/Air Pollution – Non Greenhouse Gas Emissions</b>		
Carbon monoxide (CO) in tonnes	6,491	7,390
Nitrogen oxides (NO <sub>x</sub> )	7,184	7,824
Sulphur dioxides (SO <sub>2</sub> )	1,448	1,485
Volatile organic compounds (VOCs)	1,068	1,282
<b>Emissions – (Offshore+Onshore)</b>		
<b>Total emissions</b>	<b>5,126,895</b>	<b>5,703,414</b>
<b>Discharges</b>		
Quantity of oil in produced water discharges in tonnes per million tonnes of hydrocarbon production <sup>4</sup>	3.50	5.33

1 GJ = gigajoule, energy from fuel gas and marine gas oil

2 tonnes of CO<sub>2</sub> equivalents

3 tonnes of gas flared per thousand tonnes of hydrocarbon production

4 tonnes of oil discharged to sea per million tonnes of hydrocarbon production

### 5.2.3 PROCESS SAFETY REPORTING

A Loss of Primary Containment (LOPC) is defined as an unplanned or uncontrolled release of any material from primary containment, including non-toxic and non-flammable materials (e.g. steam, hot condensate, nitrogen, compressed CO<sub>2</sub> or compressed air).

A Process Safety Event (PSE) is defined as a LOPC from a process that meets the Tier 1 or Tier 2 definitions within API RP 754.

LOPC events are reported in the Company's Single Reporting System as highlighted in section 5.2.1. This system includes a built-in calculation tool to assist the user in determining the release quantity of LOPC events. All LOPCs are analysed to identify those considered to be PSEs as per API RP 754. Process Safety KPIs used by the Company include the number of Tier 1 and the number of Tier 2 PSEs.