Our performance data

Each year, we measure our global performance and report on the safety of our operations, our impact on the environment and our contribution to communities.
We began reporting voluntarily on our environmental, safety and social performance with the first Shell Report in 1997. We support transparency and share information and data in this report and on www.shell.com.

There are inherent limitations to the accuracy of environmental and social data. We recognise that our data will be affected by these limitations, so we continue to improve data integrity by strengthening our internal controls.

We provide all non-financial data in this report on a 100% basis for companies and joint ventures where we are the operator. Environmental data pertain to direct Shell company operations unless otherwise stated. We report in this way, in line with industry practice, because these are the data we can directly manage and affect through operational improvements. We refer to the number of people employed or contracted on a full-time equivalent basis.

Operations acquired or divested during 2018 are included only for the period in which we operated these assets. Other data are collected from external sources, employee surveys and other internal sources as indicated. Data marked in the social data table come from an internal survey completed by the senior Shell representative in each country. The accuracy of environmental and social data may be lower than that of data obtained through our financial systems.

We only include data in this report for 2018 that were confirmed by the end of March 2019. If incidents are reclassified or confirmed, or if significant data changes occur after preparation of this report, they will be updated in the following year’s publication.

ASSURANCE
We have clear standards and reporting requirements for our health, safety, security, environment and social performance (HSSE&SP) data.

Shell facilities are required to adopt these standards, which define management roles and responsibilities, the scope of data at facilities and how data are calculated and collected. These standards are part of our HSSE&SP Control Framework.

To ensure we provide accurate information, our assurance process of HSSE&SP data is also a key element of the HSSE&SP Control Framework. The process flows from the facility all the way up to group level. Some examples of the assurance mechanisms in this process are:

- self-assessments at the facility level;
- internal audits at all levels of Shell;
- quarterly reviews and assessments of the data at all levels;
- an annual series of meetings between leaders at group level and senior business managers to discuss outcomes and reporting parameters; and
- formal sign-off by Shell’s senior country leaders.

The Report Review Panel of independent experts helps make sure our reporting is balanced, relevant and responsive to stakeholders’ interests.

Lloyd’s Register Quality Assurance Ltd has provided limited assurance of our direct and indirect greenhouse gas emissions data for 2018. Limited assurance means nothing has come to the auditor’s attention that would indicate that the greenhouse gas data and information as presented in the Greenhouse Gas Assertion were not materially correct. The assurance statements are available at www.shell.com.

Conversions into US and Canadian dollars are based on the average exchange rates for 2018.
### Environmental performance data

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</thead>
<tbody>
<tr>
<td>Net Carbon Footprint (gCO2e/MJ)</td>
<td>79</td>
<td>79</td>
<td>79</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Direct total GHGs (million tonnes CO2 equivalent) [A]</td>
<td>71</td>
<td>73</td>
<td>70</td>
<td>72</td>
<td>76</td>
<td>73</td>
<td>72</td>
<td>74</td>
<td>76</td>
<td>69</td>
</tr>
<tr>
<td>Carbon dioxide (CO2) (million tonnes)</td>
<td>68</td>
<td>70</td>
<td>67</td>
<td>68</td>
<td>73</td>
<td>71</td>
<td>69</td>
<td>71</td>
<td>72</td>
<td>66</td>
</tr>
<tr>
<td>Methane (CH4) (thousand tonnes)</td>
<td>92</td>
<td>123</td>
<td>138</td>
<td>132</td>
<td>126</td>
<td>120</td>
<td>93</td>
<td>133</td>
<td>128</td>
<td>127</td>
</tr>
<tr>
<td>Nitrous oxide (N2O) (thousand tonnes)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Hydrofluorocarbons (HFCs) (tonnes)</td>
<td>31</td>
<td>23</td>
<td>21</td>
<td>18</td>
<td>16</td>
<td>17</td>
<td>23</td>
<td>22</td>
<td>23</td>
<td>25</td>
</tr>
<tr>
<td>Energy indirect total GHGs [million tonnes CO2 equivalent] [B]</td>
<td>11</td>
<td>12</td>
<td>11</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>9</td>
<td>10</td>
<td>9</td>
<td>9</td>
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<tr>
<td>GHG emissions associated with exported energy [subset of direct GHGs]</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>3</td>
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**Flaring**

- Flaring (upstream) [million tonnes CO2 equivalent] [C] | 0.8 | 0.4 | 0.8 | 0.8 | 0.7 | 0.9 | 2.1 | 6.0 | 2.9 | 1.4 |
- Flaring (upstream) [million tonnes hydrocarbon flared] [C] | 5.2 | 8.2 | 7.6 | 11.8 | 13.0 | 7.4 | 7.7 | 10.0 | 10.4 | 7.8 |
- Rest of the world [E] | 1.0 | 1.7 | 1.8 | 2.6 | 2.5 | 1.0 | 0.8 | 1.4 | 1.2 | 0.7 |

**Energy intensity**

- Upstream excl. oil sands, LNG and GTL [gigajoules per tonne production] [C] | 106 | 105 | 102 | 0.83 | 0.87 | 0.89 | 0.83 | 0.75 | 0.74 | 0.76 |
- Refineries: Refinery Energy Index [G] | 94.3 | 94.8 | 95.4 | 95.4 | 94.9 | 95.6 | 98.4 | 100.8 | 101.8 | 102.2 |
- Chemical plants: Chemicals Energy Index | 88.5 | 88.2 | 91.0 | 91.6 | 90.3 | 89.8 | 91.7 | 90.8 | 89.3 | 92.0 |

**Acid gases and VOCs**

- Sulphur oxides (SOx) (thousand tonnes SO2) | 69 | 81 | 83 | 88 | 97 | 99 | 113 | 136 | 139 | 141 |
- Nitrogen oxides (NOx) (thousand tonnes NO2) | 111 | 107 | 122 | 104 | 146 | 147 | 146 | 159 | 142 |      |
- Volatile organic compounds [VOCs] (thousand tonnes) | 59 | 95 | 146 | 125 | 151 | 89 | 89 | 129 | 147 | 126 |

**Ozone-depleting emissions**

- CFCs/halons/trichloroethane (tonnes) | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 |      |
- Hydrochlorofluorocarbons [HCFCs] (tonnes) | 9 | 7 | 8 | 8 | 6 | 8 | 12 | 21 | 24 |      |

**Spills and discharges**

- Sabotage spills – volume [thousand tonnes] [I] | 1.6 | 1.4 | 3.9 | 2.3 | 2.7 | 2.2 | 3.3 | 16.0 | 3.0 | 14.0 |
- Sabotage spills – number [J] | 111 | 62 | 49 | 95 | 139 | 157 | 137 | 118 | 112 | 95 |
- Operational spills – volume [thousand tonnes] | 0.8 | 0.4 | 0.8 | 0.8 | 0.7 | 0.9 | 2.1 | 6.0 | 2.9 | 1.4 |
- Nigeria [K] | 0.4 | 0.1 | 0.3 | 0.2 | 0.3 | 0.4 | 0.2 | 5.3 | 0.7 | 0.3 |
- Rest of the world [L] | 0.4 | 0.3 | 0.5 | 0.7 | 0.4 | 0.5 | 1.9 | 0.7 | 2.2 | 1.1 |
- Operational spills – number | 92 | 104 | 72 | 108 | 153 | 174 | 207 | 211 | 195 | 275 |
- Nigeria [M] | 15 | 10 | 8 | 16 | 38 | 31 | 37 | 64 | 32 | 37 |
- Rest of the world | 77 | 94 | 64 | 92 | 115 | 143 | 170 | 147 | 163 | 238 |
- Hurricane spills – volume [thousand tonnes] [N] | 0.0 | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |      |
- Oil in effluents to surface environment [thousand tonnes] | 1.4 | 1.2 | 1.0 | 1.0 | 0.9 | 1.0 | 1.3 | 1.6 | 1.5 |      |

**Water**

- Fresh water withdrawn [million cubic metres] | 199 | 201 | 195 | 186 | 199 | 198 | 203 | 209 | 202 | 198 |
- Fresh water consumed [million cubic metres] | 147 | 150 | 152 | 141 | 165 | n/c | n/c | n/c | n/c | n/c |

**Waste disposal**

- Hazardous [thousand tonnes] | 592 | 638 | 658 | 455 | 529 | 770 | 820 | 740 | 1,048 | 962 |
- Non-hazardous [thousand tonnes] | 1,407 | 1,382 | 1,491 | 1,680 | 1,674 | 2,065 | 2,295 | 1,850 | 1,079 | 1,139 |
- Total waste [thousand tonnes] [O] | 1,999 | 2,020 | 2,148 | 2,135 | 2,203 | 2,385 | 3,115 | 2,590 | 2,127 | 2,101 |

(A) Greenhouse gas emissions [GHGs] comprise carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulphur hexafluoride and nitrogen trifluoride. The data are calculated using locally regulated methods where they exist. Where there is no locally regulated method, the data are calculated using the 2009 API Compendium, which is the recognised industry standard under the GHG Protocol Corporate Accounting and Reporting Standard. There are inherent limitations to the accuracy of such data. Oil and gas industry guidelines (IPIECA/API/100G) indicate that several sources of uncertainty can contribute to the overall uncertainty of a corporate emissions inventory. We have estimated the overall uncertainty of our direct GHG emissions to be around 2%. 2015-2018 emissions are calculated using Global Warming Potential factors from the IPCC’s Fourth Assessment Report. Data for prior years were calculated using Global Warming Potential factors from the IPCC’s Second Assessment Report.

(B) These emissions were calculated using the market-based method in line with the GHG Protocol Corporate Accounting and Reporting Standard.

(C) The term upstream in this context includes assets and activities from our Upstream and Integrated Gas businesses.

(D) Nigeria includes SPDC onshore operations (0.5 million tonnes flared in 2018) and SNEPCo offshore operations (0.3 million tonnes flared in 2018).

(E) Flaring from the Majnoon field in Iraq and from Malaysia amounted to 0.4 and 0.1 million tonnes of hydrocarbons respectively in 2018.

(F) Methodology was updated in 2012. Data for prior years are not directly comparable.

(G) Data are indexed to 2002, based on Solomon Associates Energy Intensity Index 2006 methodology.

(H) All spill volumes and numbers are for spills of more than 100 kilograms. Due to the rounding of numbers, spill volumes for Nigeria and the rest of the world might not add up to the exact total volume of spills.

(I) As of the end of March 2019, there was 1 spill under investigation in Nigeria that may result in adjustments.

(J) All sabotage- and theft-related spills have occurred in Nigeria except in 2016 (0.001 thousand tonnes) and 2015 (0.005 thousand tonnes).

(K) Nigeria includes SPDC onshore operations and SNEPCo offshore operations. A single spill at the Bonga field offshore Nigeria amounted to 4.8 thousand tonnes in 2011.

(L) Nigeria includes SPDC onshore operations (13 operational spills in 2018) and SNEPCo offshore operations (0 operational spills in 2018).

(M) 2017 data reflect 4 spills caused by Hurricane Harvey in the USA.

(N) Freshwater figures do not include once-through cooling water.

(O) In 2018, we sent waste off-site for recycling or reuse, or sold around 400 thousand tonnes of material that would otherwise have been disposed of as waste. n/c = not calculated.
## Safety performance data [A]

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<tbody>
<tr>
<td><strong>Fatalities</strong></td>
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<tr>
<td>Total number</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>7</td>
<td>5</td>
<td>5</td>
<td>8</td>
<td>6</td>
<td>12</td>
<td>20</td>
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<tr>
<td>Employees</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Contractors</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>6</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>12</td>
<td>19</td>
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<tr>
<td>Fatal accident rate (FAR)</td>
<td>0.4</td>
<td>0.4</td>
<td>0.5</td>
<td>1.1</td>
<td>0.7</td>
<td>0.8</td>
<td>1.3</td>
<td>1.0</td>
<td>1.6</td>
<td>2.3</td>
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<tr>
<td>Fatalities per 100 million working hours [employees and contractors]</td>
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| **Injuries and process safety incidents** |      |      |      |       |       |       |       |       |       |       |
| Total recordable case frequency (TRCF) | 0.9  | 0.8  | 1.0  | 0.9   | 1.0   | 1.3   | 1.2   | 1.2   | 1.2   | 1.4   |
| Lost time injury frequency (ITIF) | 0.3  | 0.2  | 0.3  | 0.3   | 0.3   | 0.4   | 0.3   | 0.4   | 0.4   | 0.4   |
| Lost time injuries per million working hours [employees and contractors] | | | | | | | | | | |
| **Operational process safety events** |      |      |      |       |       |       |       |       |       |       |
| Tier 1 [B] | 35   | 49   | 39   | 51    | 57    | 65    | 91    | n/c   | n/c   | n/c   |
| Tier 2 [B] | 86   | 117  | 107  | 169   | 194   | 246   | 308   | n/c   | n/c   | n/c   |

| **Illnesses** |      |      |      |       |       |       |       |       |       |       |
| Total recordable occupational illness frequency (TROIF) | 0.4  | 0.3  | 0.4  | 0.6   | 1.0   | 0.8   | 0.5   | 0.7   | 0.8   | 0.6   |
| Illnesses per million working hours [employees only] | | | | | | | | | | |

### Security

- Using armed security (% of countries): 21, 14, 17, 19, 24, 19, 17, 14, 9, 17
- Using armed company security (% of countries): 3, 1, 1, 1, 1, 3, 0, 1, 1, 1
- Using armed contractor security (% of countries): 10, 3, 7, 8, 10, 8, 10, 9, 6, 10

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## Social performance data

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<tbody>
<tr>
<td><strong>Gender diversity [C]</strong></td>
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<tr>
<td>In supervisory/professional positions (% women)</td>
<td>29.9</td>
<td>29.1</td>
<td>28.0</td>
<td>28.0</td>
<td>29.0</td>
<td>28.8</td>
<td>28.1</td>
<td>27.3</td>
<td>26.3</td>
<td>26.4</td>
</tr>
<tr>
<td>In management positions (% women)</td>
<td>23.7</td>
<td>22.3</td>
<td>21.0</td>
<td>20.0</td>
<td>21.0</td>
<td>18.8</td>
<td>18.2</td>
<td>17.6</td>
<td>17.0</td>
<td>16.1</td>
</tr>
<tr>
<td>In senior leadership positions (% women)</td>
<td>24.0</td>
<td>22.2</td>
<td>20.0</td>
<td>19.0</td>
<td>18.2</td>
<td>17.2</td>
<td>16.2</td>
<td>16.6</td>
<td>15.3</td>
<td>14.0</td>
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</table>

### Staff forums and grievance procedures

- % countries with staff access to staff forum, grievance procedure or other support system: 100, 100, 100, 100, 100, 99, 100, 99

### Child labour (% countries with procedures in place)

- Own operations: 100, 100, 100, 100, 100, 100, 100, 99, 98
- Contractors: 100, 100, 100, 100, 100, 100, 100, 97, 96, 97
- Suppliers: | | | | | | | | | |

### Forced labour (% countries with procedures in place)

- Own operations: 100, 100, 100, 100, 100, 100, 100, 99, 98
- Contractors and suppliers: 100, 100, 100, 100, 100, 100, 100, 97, 95, 89

### Integrity

- Code of Conduct violations [D]: 370, 261, 341, 217, 267, 181, 209, 226, 205, 165

### Contracting and procurement

- Estimated expenditure on goods and services in lower-income countries ($ billion) [E] [F]: 4.1, 4.9, 4.4, 6, 14, 12, 14, 12, 13, 12

### Social investment [G]

- Estimated voluntary social investment (equity share) ($ million): 113, 111, 103, 122, 160, 159, 149, 125, 121, 132
- Estimated social investment spend (equity share) in lower-income countries ($ million) [H]: 102, 107, 96, 43, 73, 74, 67, 45, 61, 54

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[A] In line with industry standards, we distinguish three contract modes. Mode 1: contractor/supplier performs work under Shell’s HSSE Management System (HSSE MS); Mode 2: contractor/supplier performs work under its own HSSE MS, which is materially equivalent to Shell’s HSSE MS; Mode 3: contractor/supplier performs work under its own HSSE MS. Also in line with industry standards, we report on safety performance only for contract modes 1 and 2.

[B] Process safety events classified according to guidance from the IOGP and API. In 2018, there were nine Tier 1 sabotage-related events. We did not track the number of Tier 2 sabotage-related events in 2018.

[C] Diversity data obtained from our human resources system.

[D] Code of Conduct violations represent the number of reported incidents in the Shell Global Helpline (excluding queries or customer service queries), which have been investigated and closed during the relevant period and where the allegation was found to be (at least partially) true.

[E] Estimated expenditure in countries where gross domestic product amounts to less than $15,000 per year per person (source: UNDP Human Development Index 2015). In 2015, the UNDP index update no longer includes some of the countries in which Shell invests, which impacts on our reported spend amount.

[F] From 2013 onwards, this figure only includes the amount spent on goods and services by Shell group companies.

[G] Social investment spending varies from year to year depending on business climate, locations and type of activities under way. This is voluntary social investment and does not include social investments made through contractual agreements with host governments, voluntary work by Shell employees and donations of equipment.

[H] Estimated voluntary social investment spending in countries where gross domestic product amounts to less than $15,000 a year per person (source: UNDP Human Development Index 2016).