



# Basis of reporting





# Reporting criteria summary for selected metrics in our 2021 corporate reporting

The purpose of this document is to outline the approach and scope used for data collection and forms the basis for assurance of sustainability performance data, as published in our [bp annual report and Form 20-F, sustainability report, ESG datasheet](#) and online at [bp.com/sustainability](https://bp.com/sustainability).

## Scope of reporting

The indicators included cover our activities during the period 1 January to 31 December 2021. Reporting covers our global operations including those joint ventures that fall within our operational control boundary. In some cases, we may also provide information about some of our joint venture activities where we are not the operator.

Where appropriate we have shown where the indicators relate to our aims to get bp to net zero.

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# 1. Safety

## 1.1 Recordable injury frequency (RIF) – workforce

<b>Definition</b>	The total number of recordable injuries to bp employees and bp contractors for every 200,000 hours worked by the bp workforce. bp's definition of recordable injury is aligned with the Occupational Safety and Health Administration (OSHA) definition.
<b>Scope</b>	The KPI covers bp workforce (bp employees and bp contractors). It covers the reporting period 1 January to 31 December 2021. This metric is reported on an operational control basis.
<b>Units</b>	Recordable injuries per 200,000 workforce hours worked.
<b>Method</b>	IRIS is bp's global application for recording, reporting and learning from health and safety incidents. Injury incidents can be recorded in IRIS by any bp employee and any bp contractor with IRIS access.  IRIS incident managers are accountable for confirming the completeness and accuracy of the incident record. IRIS determines the classification of an incident using the data submitted in the incident record.  RIF is calculated in IRIS by dividing the total number of recordable injuries by the total number of workforce hours worked, multiplied by 200,000.  OSHA adopted 200,000 hours as the basis for frequency unitization as it approximately equates to the hours worked by 100 people in a year.
<b>Source</b>	Recordable injuries are recorded in IRIS by entities across the bp group.  Workforce hours worked are submitted into IRIS by entities across bp group based on HR and contractor data. Recordable injuries and workforce hours worked are the basis of recordable injury frequency reporting.

## 1.2 Day away from work case frequency (DAFWCF) – workforce

<b>Definition</b>	The total number of injury day away from work cases to bp employees and bp contractors for every 200,000 hours worked by the bp workforce. bp's definition of DAFWC is aligned with the OSHA definition.
<b>Scope</b>	bp workforce (bp employees and bp contractors). It covers the reporting period 1 January to 31 December 2021. This metric is reported on an operational control basis.
<b>Units</b>	Day away from work cases per 200,000 hours worked.
<b>Method</b>	IRIS is bp's global application for recording, reporting and learning from health and safety incidents. Injury incidents can be recorded in IRIS by any bp employee and any bp contractor with IRIS access.  IRIS incident managers are accountable for confirming the completeness and accuracy of the incident record. IRIS determines the classification of an incident using the data submitted in the incident record.  DAFWCF is calculated in IRIS by dividing the total number of days away from work cases by the total number of workforce hours worked, multiplied by 200,000.  OSHA adopted 200,000 hours as the basis for frequency unitization as it approximately equates to the hours worked by 100 people in a year.
<b>Source</b>	Recordable injuries are recorded in IRIS by entities across the bp group.  Workforce hours worked are submitted into IRIS by entities across bp group based on HR and contractor data. Recordable injuries and workforce hours worked are the basis of day away from work case frequency reporting.

## 1. Safety

### 1.3 Number of fatalities – workforce

<b>Definition</b>	A workforce fatality is any death of an employee or contractor as a result of a work-related incident.
<b>Scope</b>	bp workforce (bp employees and bp contractors). It covers the reporting period 1 January to 31 December 2021. This metric is reported on an operational control basis.
<b>Units</b>	Number of work-related workforce fatalities.
<b>Method</b>	IRIS is bp's global application for recording, reporting and learning from health and safety incidents. Fatality incidents can be recorded in IRIS by any bp employee and any bp contractor with IRIS access.  IRIS incident managers are accountable for confirming the completeness and accuracy of the incident record. IRIS determines the classification of an incident using the data submitted in the incident record.
<b>Source</b>	Fatalities are recorded in IRIS by entities across the bp group and are the basis of workforce fatality reporting.

### 1.4 Number of oil spills >1bbl

<b>Definition</b>	The number of accidental or unplanned losses of hydrocarbon from primary containment from a bp or contractor operation, irrespective of any secondary containment or recovery. Oil spills >1bbl are defined as any liquid hydrocarbon release of more than, or equal to, one barrel (159 litres, equivalent to 42 US gallons).
<b>Scope</b>	Reporting period 1 January to 31 December 2021.  It includes reported oil spills >1bbl occurring within bp's operational HSSE reporting boundary. That boundary includes bp's own operated facilities and joint ventures where bp is the operator. In some cases, we may also provide information about some of our joint venture activities where we are not the operator.
<b>Units</b>	Number oil spills >1bbl.
<b>Method</b>	IRIS is bp's global application for recording, reporting and learning from health and safety incidents.  Oil spill incidents can be recorded in IRIS by any bp employee and any bp contractor with IRIS access. IRIS incident managers are accountable for confirming the completeness and accuracy of the incident record. IRIS determines the classification of an incident using the data submitted in the incident record.
<b>Source</b>	Oil spill incidents are recorded in IRIS by entities across the bp group and are the basis of oil spills >1bbl reporting.

### 1.5 Process safety events (tier 1 and tier 2)

<b>Definition</b>	An unplanned or uncontrolled release of any material, including non-toxic and non-flammable materials, from a process. Process safety events (PSE) tier 1 are the most severe, with consequences including one or more of: workforce DAFWC or fatality; third-party hospital admission or fatality; an officially declared community evacuation or community shelter-in place; fire/explosion; pressure relief device (PRD) discharge to atmosphere or material release, when meeting defined thresholds and conditions.  PSE tier 2 consequences include workforce recordable injury, less severe fire/explosion or PRD discharge or release of material when meeting defined thresholds and conditions.  bp's definitions of PSE tier 1 and tier 2 are aligned with the American Petroleum Institute guide RP-754 Process Safety Performance Indicators for the Refining and Petrochemical Industries (second edition, April 2016) and The International Association of Oil & Gas Producers (IOGP) Report 456 – Process safety – recommended practice on key performance indicators.
<b>Scope</b>	Reporting period 1 January to 31 December 2021.  It includes reported process safety events occurring within bp's operational HSSE reporting boundary. That boundary includes bp's own operated facilities and joint ventures where bp is the operator. In some cases, we may also provide information about some of our joint venture activities where we are not the operator.
<b>Units</b>	Number of tier 1 and tier 2 process safety events.
<b>Method</b>	IRIS is bp's global application for recording, reporting and learning from health and safety incidents.  Process safety incidents can be recorded in IRIS by any bp employee and any bp contractor with IRIS access. IRIS incident managers are accountable for confirming the completeness and accuracy of the incident record. IRIS determines the classification of an incident using the data submitted in the incident record.
<b>Source</b>	Process safety incidents are recorded in IRIS by entities across the bp group and are the basis of process safety events tier 1 and tier 2 reporting.

## 2. Net zero operations (aim 1)

Aim 1 is to be net zero across our entire operations on an absolute basis by 2050 or sooner. This aim relates to Scope 1 and Scope 2 greenhouse gas (GHG) emissions.

### 2.1 Operational control boundary Scope 1 (direct) GHG emissions (MtCO<sub>2</sub>e)

**Definition** Total (100%) Scope 1 (direct) GHG emissions from source activities operated by bp or otherwise within bp’s operational control boundary. bp’s reported GHG emissions include CH<sub>4</sub> and CO<sub>2</sub>. Other GHGs are not included as they are not material to our operations. CH<sub>4</sub> emissions are converted to carbon dioxide equivalent using the 100-year GWP recommended by the Fourth Assessment Report of the Inter-governmental Panel on Climate Change (IPCC).

**Scope** Reporting period 1 January to 31 December 2021.  
 The scope of greenhouse gas data reported covers bp’s operational control boundary. bp operated includes:

- bp operated assets (which includes unmanned assets such as wellheads and pipelines where bp workforce are not present on a day-to-day basis, where these are operated by bp)
- Company owned and operated retail sites.
- Vessels for which bp holds the International Safety Management Document of Compliance (DOC).
- Road vehicles, aircraft and rail transportation that are dedicated to bp’s business use.
- Contractor drilling activities conducted on behalf of businesses under bp operational control.
- Until handover of field or asset operations, sites and assets where following divestment, bp no longer has an equity interest but maintains day-to-day operations pursuant to a contractual arrangement.
- Leased offices over 50,000 ft<sup>2</sup>.

This boundary for reporting broadly aligns with bp’s HSSE operational boundary for certain incident reporting which means that these assets are classified in the same way (i.e. as bp-operated or non-bp-operated) for both incident reporting purposes and GHG emissions reporting purposes.

The scope of reporting includes emissions from the UK and offshore area, and Global (excluding UK and offshore) emissions as provided in Streamlined Energy and Carbon Reporting (SECR).

**Units** MtCO<sub>2</sub>e.

**Method** Data is required to be submitted in accordance with the bp Practice, Submission of Environmental and Social Performance Data Group Defined Practice (GDP) 8.1 which is broadly based on the GHG Protocol Corporate Standard and the IPIECA Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions 2nd Edition, May 2011. The bp Procedure, Calculations and Methodologies for Environmental Performance Data (GPRO 8.1 0001) sets out the methodologies we use for calculation of GHG data which are based on the API Compendium of GHG Emissions Methodologies for the Oil and Gas Industry and industry recognized references, such as the IPCC guidelines and US EPA publications.

The responsibility for calculating and submitting GHG emissions to be used for reporting is assigned to individual bp facilities and business departments, which are termed ‘Reporting Units’ (RUs). RUs submit a quarterly breakdown of CO<sub>2</sub> and methane data directly into the group reporting tool, OneCSR. They are required to account for all significant variances from the previous year and identify the sustainable emission reductions for the reporting period, where applicable.

The RUs follow a formal GHG data submission sign-off process and are responsible for ensuring the data has been reported in accordance with the requirements. Once submitted, the GHG data is reviewed at corporate level by subject matter experts.

The RUs quantify their emissions of carbon dioxide and methane based on the methodologies and requirements described in our requirements, which also specify a ‘hierarchy’ of possible approaches, with a bias towards direct measurement. Where local regulatory requirements differ from the specified methodologies, RUs may choose to submit data using local regulatory methodologies. In the event the regulatory methodology for a significant source results in a figure judged to be less accurate than the specified methodologies then, where this is judged to be significant, the RU should use the bp specified calculation methodologies in its submission to the group reporting tool, OneCSR.

In addition, this metric is reported with four supporting metrics following the same methodology outlined above:

- i. CO<sub>2</sub> emissions.
- ii. Methane emissions (unit of Mt).
- iii. UK and offshore Scope 1 emissions.
- iv. Global (excluding UK and offshore) Scope 1 emissions.

**Source** Direct GHG emissions data are submitted into the group reporting tool, OneCSR, by the RUs, reviewed at corporate level by subject matter experts and the metric is independently assured for use in external reporting.

## 2. Net zero operations (aim 1)

### 2.2 Operational control boundary Scope 2 (indirect) emissions (MtCO<sub>2</sub>e)

**Definition** Total (100%) Scope 2 (indirect) GHG emissions from source activities that are operated by bp or otherwise within bp’s operational control boundary. Scope 2 (indirect) emissions are those associated with the consumption of purchased electricity, heat, steam and cooling. bp reports GHG emissions on the basis of CH<sub>4</sub> and CO<sub>2</sub>.

**Scope** Reporting period 1 January to 31 December 2021.

The scope of greenhouse gas data reported covers bp’s operational control boundary. bp operated includes:

- bp operated assets (which includes unmanned assets such as wellheads and pipelines where bp workforce are not present on a day-to-day basis, where these are operated by bp)
- Company owned and operated retail sites.
- Vessels for which bp holds the International Safety Management Document of Compliance (DOC).
- Road vehicles, aircraft and rail transportation that are dedicated to bp’s business use.
- Contractor drilling activities conducted on behalf of businesses under bp operational control.
- Until handover of field or asset operations, sites and assets where following divestment, bp no longer has an equity interest but maintains day-to-day operations pursuant to a contractual arrangement.
- Leased offices over 50,000 ft<sup>2</sup>.

This boundary for reporting broadly aligns with bp’s HSSE operational boundary for certain incident reporting which means that these assets are classified in the same way (i.e. as bp-operated or non-bp-operated) for both incident reporting purposes and GHG emissions reporting purposes.

The scope of reporting includes emissions from the UK and offshore area, and Global (excluding UK and offshore) emissions as provided in Streamlined Energy and Carbon Reporting (SECR).

**Units** MtCO<sub>2</sub>e.

**Method** Data is required to be submitted in accordance with the bp Practice Submission of Environmental and Social Performance Data Group Defined Practice (GDP ) 8.1 which is broadly based on the GHG Protocol Corporate Standard and the IPIECA Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions 2nd Edition, May 2011. The bp Procedure Calculations and Methodologies for Environmental Performance Data (GPRO 8.1-0001) also set out the methodologies we use for calculation of GHG data which are based on the API Compendium of GHG Emissions Methodologies for the Oil and Gas Industry and industry recognized references, such as the IPCC guidelines and US EPA publications.

The responsibility for calculating and submitting Scope 2 GHG emissions to be used for reporting is assigned to individual bp facilities and business departments, which are termed ‘Reporting Units’ (RUs). The RUs follow a formal GHG data submission sign-off process and are responsible for ensuring the data has been reported in accordance with our requirements. Once submitted, the GHG data is reviewed at corporate level by subject matter experts.

In addition, this metric is reported with two supporting metrics:

- UK and offshore Scope 2 emissions.
- Global (excluding UK and offshore) Scope 2 emissions.

**Source** Scope 2 (indirect) GHG emissions data are submitted into the group reporting tool, OneCSR, by the RUs, reviewed at corporate level by subject matter experts and the metric is independently assured for use in external reporting.

## 2. Net zero operations (aim 1)

### 2.3 Scope 1 (direct) GHG emissions (equity boundary) (MtCO<sub>2</sub>e)

<b>Definition</b>	bp's equity share of direct CO <sub>2</sub> and direct methane emissions. This is irrespective of whether activities are operated by bp (see Operational control-based Scope 1 (direct) greenhouse gas emissions above). bp's reported GHG emissions include CH <sub>4</sub> and CO <sub>2</sub> . Other GHGs are not included as they are not material to our operations. CH <sub>4</sub> emissions are converted to carbon dioxide equivalent using the 100-year GWP recommended by the Fourth Assessment Report of the Inter-governmental Panel on Climate Change (IPCC).
<b>Scope</b>	Reporting period 1 January to 31 December 2021. bp equity share data comprises 100% of emissions from subsidiaries and the percentage of emissions equivalent to our share of joint arrangements and associates, other than bp's share of Rosneft <sup>a</sup> . RUs are advised to check with finance directors so that emissions are collected and submitted based on the status and extent of equity share of any activities within the RU.
<b>Units</b>	MtCO <sub>2</sub> e.
<b>Method</b>	Data is required to be submitted in accordance with the bp Practice Submission of Environmental and Social Performance Data Group Defined Practice (GDP) 8.1 which is broadly based on the GHG Protocol Corporate Standard and IPIECA Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions 2nd Edition, May 2011. RUs submit a quarterly breakdown of CO <sub>2</sub> and methane data directly into the group reporting tool, OneCSR. For the end of year submission, they are required to account for all significant variances from the previous year and identify the sustainable emission reductions for the reporting period, where applicable. The RUs follow a formal GHG data submission sign-off process and are responsible for ensuring that the data has been submitted in accordance with the requirements. Once submitted, the GHG data is reviewed at corporate level by subject matter experts.
<b>Source</b>	Direct GHG emissions data are submitted into the group reporting tool, OneCSR, by the RUs, reviewed at corporate level by subject matter experts and independently assured for use in external reporting.

### 2.4 Scope 2 (indirect) GHG emissions (equity boundary) (MtCO<sub>2</sub>e)

<b>Definition</b>	bp's equity share of Scope 2 (indirect) GHG emissions. Scope 2 (indirect) emissions are those associated with the consumption of purchased electricity, heat, steam and cooling. bp reports GHG emissions on the basis of CH <sub>4</sub> and CO <sub>2</sub> .
<b>Scope</b>	Reporting period 1 January to 31 December 2021. bp equity share data comprises 100% of emissions from subsidiaries and the percentage of emissions equivalent to our share of joint arrangements and associates, other than bp's share of Rosneft <sup>a</sup> .
<b>Units</b>	MtCO <sub>2</sub> e.
<b>Method</b>	Data is required to be submitted in accordance with the bp Practice Submission of Environmental and Social Performance Data Group Defined Practice (GDP) 8.1 which is broadly based on the GHG Protocol Corporate Standard and the IPIECA Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions 2nd Edition, May 2011. RUs submit a quarterly breakdown of CO <sub>2</sub> and methane data directly into the group reporting tool, OneCSR. For the end of year submission, they are required to account for all significant variances from the previous year and identify the sustainable emission reductions for the reporting period, where applicable. The RUs follow a formal GHG data submission sign-off process and are responsible for ensuring that the data has been submitted in accordance with our requirements. Once submitted, the GHG data is reviewed at corporate level by subject matter experts.
<b>Source</b>	Scope 2 (indirect) GHG emissions data are submitted into the group reporting tool, OneCSR, by the RUs, reviewed at corporate level by subject matter experts and the metric is independently assured for use in external reporting.

<sup>a</sup> On 27 February 2022, following the military action in Ukraine, the bp board announced that bp intends to exit its 19.75% shareholding in Rosneft Oil Company (Rosneft).

## 2. Net zero operations (aim 1)

### 2.5 Cumulative total sustainable emissions reductions (SERs) (MtCO<sub>2</sub>e)

<b>Definition</b>	<p>Sustainable GHG emissions reductions (SERs) from activities that are within:</p> <ol style="list-style-type: none"> <li>1) the bp operational control boundary.</li> <li>2) the bp equity share boundary.</li> </ol> <p>SERs result from actions or interventions that have led to ongoing reductions in Scope 1 (direct) and/or Scope 2 (indirect) GHG emissions (carbon dioxide and methane) such that GHG emissions would have been higher in the reporting year if the intervention had not taken place. SERs must meet three criteria: a specific intervention that has reduced GHG emissions; the reductions must be quantifiable; and the reduction is expected to be ongoing. Reductions are reportable for a 12-month period from the start of the intervention/action.</p>
<b>Scope</b>	<p>SERs reported are from reductions that meet the three criteria described above, in the period 1 January to 31 December 2021. SERs reported include Scope 1 (direct) CO<sub>2</sub> emission reductions, direct CH<sub>4</sub> (methane) emission reductions and Scope 2 (indirect) GHG emissions reductions.</p> <p>The operational boundary includes the following:</p> <ul style="list-style-type: none"> <li>• bp operated assets (which includes unmanned assets such as wellheads and pipelines where bp workforce are not present on a day-to-day basis, where these are operated by bp).</li> <li>• Company owned and operated retail sites.</li> <li>• Vessels for which bp holds the International Safety Management Document of Compliance (DOC).</li> <li>• Road vehicles, aircraft and rail transportation that are dedicated to bp's business use.</li> <li>• Contractor drilling activities conducted on behalf of businesses under bp operational control.</li> <li>• Until handover of field or asset operations, sites and assets where following divestment, bp no longer has an equity interest but maintains day-to-day operations pursuant to a contractual arrangement.</li> <li>• Leased offices over 50,000 ft<sup>2</sup></li> </ul> <p>bp equity share boundary: bp equity share data comprises 100% of emissions from subsidiaries and the percentage of emissions equivalent to our share of joint arrangements and associates, other than bp's share of Rosneft<sup>a</sup>.</p>

<b>Units</b>	MtCO <sub>2</sub> e.
<b>Method</b>	<p>The responsibility for calculating and submitting SERs is with individual bp facilities and business departments, which are termed 'Reporting Units'.</p> <p>Where an intervention has taken place, the RU assesses how much higher the emissions would have been during the current reporting period if the project or intervention had not happened. This is applicable for reductions of Scope 1 (direct) CO<sub>2</sub> and methane emissions and Scope 2 (indirect) GHG emissions. Details on SERs, including the methodology and calculations, are provided to subject matter experts at corporate level who review the information and confirm that the reduction meets the criteria to qualify as a SER.</p>
<b>Source</b>	Data on SERs is submitted into the group reporting tool, OneCSR, by RUs, reviewed at corporate level by subject matter experts, and independently assured for use in external reporting.

<sup>a</sup> On 27 February 2022, following the military action in Ukraine, the bp board announced that bp intends to exit its 19.75% shareholding in Rosneft Oil Company (Rosneft).



## 2. Net zero operations (aim 1)

### 2.6 Energy consumption (GWh, base units of kWh)

<b>Definition</b>	Energy consumption from activities operated by bp or otherwise within bp’s operational control boundary.
<b>Scope</b>	<p>Reporting period 1 January to 31 December 2021.</p> <p>The scope of energy consumption data reported covers bp’s operational control boundary. bp operated includes:</p> <ul style="list-style-type: none"> <li>• bp operated assets (which includes unmanned assets such as wellheads and pipelines where bp workforce are not present on a day-to-day basis, where these are operated by bp).</li> <li>• Company owned and operated retail sites.</li> <li>• Vessels for which bp holds the International Safety Management Document of Compliance (DOC).</li> <li>• Road vehicles, aircraft and rail transportation that are dedicated to bp’s business use.</li> <li>• Contractor drilling activities conducted on behalf of businesses under bp operational control.</li> <li>• Until handover of field or asset operations, sites and assets where following divestment, bp no longer has an equity interest but maintains day-to-day operations pursuant to a contractual arrangement.</li> <li>• Leased offices over 50,000 ft<sup>2</sup>.</li> </ul> <p>This boundary for reporting broadly aligns with bp’s HSSE operational boundary for certain incident reporting which means that these assets are classified in the same way (i.e. as bp-operated or non-bp-operated) for both incident reporting purposes and GHG emissions and energy reporting purposes.</p> <p>The scope of reporting includes energy consumption from the UK and offshore, and Global (excluding UK and offshore) as provided in SECR.</p>
<b>Units</b>	GWh, base units of kWh.

<b>Method</b>	<p>Data is required to be submitted in accordance with the bp Practice Submission of Environmental and Social Performance Data Group Defined Practice (GDP) 8.1 which is broadly based on the GHG Protocol Corporate Standard and the IPIECA Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions 2nd Edition, May 2011. The bp Procedure, Calculations and Methodologies for Environmental Performance Data (GPRO 8.1 0001) sets out the methodologies we use for reporting energy data.</p> <p>Data is provided by fuel type and includes but is not limited to electricity, steam, fuel gas, diesel and is the underlying global energy consumption used to calculate GHG emissions excluding flared and vented hydrocarbons.</p> <p>Although these excluded sources reflect loss of energy resources, they do not reflect energy use required for production or manufacturing of products.</p> <p>The responsibility for calculating and submitting energy consumption data to be used for reporting is assigned to individual bp facilities and business departments, which are termed ‘Reporting Units’ (RUs). RUs submit a quarterly breakdown of energy data directly into the group reporting tool, OneCSR.</p> <p>The RUs follow a formal energy data submission sign-off process and are responsible for ensuring that the data has been reported in accordance with our requirements. Once submitted, the energy data is reviewed at corporate level by subject matter experts.</p> <p>The total, global energy consumption is reported with two supporting metrics:</p> <ol style="list-style-type: none"> <li>UK and offshore energy consumption.</li> <li>Global (excluding UK and offshore) energy consumption.</li> </ol>
<b>Source</b>	Energy data are submitted into the group reporting tool, OneCSR, by the RUs, reviewed at corporate level by subject matter experts and the metric is independently assured for use in external reporting.

## 3. Net zero production (aim 2)

Aim 2 is to be net zero on an absolute basis across the carbon in our upstream oil and gas production by 2050 or sooner. This aim is associated with emissions from the carbon in our upstream oil and gas production. This is our Scope 3 aim and is based on bp’s net share of production<sup>a</sup>.

### 3.1 Emissions from the carbon in our upstream oil and gas production (MtCO<sub>2</sub>e)

**Definition** Estimated CO<sub>2</sub> emissions from the assumed combustion of upstream production of crude oil, natural gas and natural gas liquids (NGL), based on bp’s net share of production, excluding bp’s share of Rosneft production and assuming that all produced volumes undergo full stoichiometric combustion to CO<sub>2</sub>.

These emissions are broadly equivalent to the GHG Protocol, Scope 3, category 11, with the specific scope of upstream production volumes.

The CO<sub>2</sub> emissions from the Carbon in Upstream Oil and Gas Production is calculated as follows:

$$\text{Carbon in Upstream Production} = \sum_i (\text{Mass of CO}_2 \text{ Emissions})_i$$

Where:  $i$  corresponds to the production phase (i.e. crude oil, natural gas or NGL)

The mass of CO<sub>2</sub> emissions is calculated as follows:

$$\text{Mass of CO}_2 \text{ Emissions} = \text{Produced Volume} \times \text{Density} \times \frac{\text{Cwt}\%}{100} \times \frac{44}{12}$$

Where:

Produced volume is the volume of bp’s net share of production of crude oil, or natural gas or NGL.

Density is the density of crude oil, or natural gas or NGL;

Cwt% is the carbon content of crude oil, or natural gas or NGL.

<b>Scope</b>	Reporting period 1 January to 31 December 2021. Based on bp’s net share of production volumes of crude oil, natural gas and NGLs, excluding bp’s share of Rosneft production
<b>Units</b>	MtCO <sub>2</sub> e.
<b>Method</b>	The calculation is performed by the bp Strategy, Sustainability & Ventures (SS&V) carbon ambition team and is subject to independent third-party assurance for use in external reporting.
<b>Source</b>	The bp net share of production volumes (excluding Rosneft) are consistent with stock exchange announcements and data published in bp annual reports.

<sup>a</sup> Excluding bp’s share of production in Rosneft. On 27 February 2022, following the military action in Ukraine, the bp board announced that bp intends to exit its 19.75% shareholding in Rosneft Oil Company (Rosneft).

## 4. Net zero sales (aim 3)

Aim 3 is to reduce to net zero the carbon intensity of the energy products we sell by 2050 or sooner. This is a lifecycle carbon intensity approach, per unit of energy. As updated in February 2022 it covers both marketing sales and physically traded energy products and potentially, in future, certain other products, for example, associated with land carbon projects.

We're targeting a reduction of 5% by 2025 and aim to reduce it by 15-20% by 2030, against our 2019 baseline. This aim relates to the intensity of GHG emissions estimated on a lifecycle basis from the use, production and distribution of marketed and physically traded energy products per unit of energy (MJ) delivered.

Aim 3 as described above reflects updates made in February 2022. Prior to February 2022 (and as described below) the aim applied to marketed sales only, the 2030 aim was for a carbon-intensity reduction of >15% and the 2050 aim was for a reduction of 50%. This prior basis applied for the 2021 reporting year for which the aim 3 2019 baseline was 79gCO<sub>2</sub>e/MJ.

### 4.1 Average emissions intensity of our marketed energy products

**Definition** Rate of GHG emissions estimated on a lifecycle basis from the use, production and distribution of marketed energy products per unit of energy (MJ) delivered.

**Scope** Reporting period 1 January to 31 December 2021.

bp reports the carbon intensity of our marketed energy products, as a weighted average across all categories and provides a breakdown by four key product categories: refined products, gas products, bioproducts, and power products.

Marketing scope relates to sales (excluding bp intercompany sales) of energy products, where the product is sold to an end-user (customer or business), wholesaler, distributor, or utility company, by relevant bp business groups (P&O, C&P and G&LCE) and integrator (T&S).

For sales by bp subsidiaries, 100% of sales are included in aim 3. For sales by a bp joint operation or sales of gas, low carbon products and EV power by equity accounted entities (EAEs), the bp equity % of sales is included in aim 3. Marketed product sales do not include sales by Rosneft<sup>a</sup>.

For the 2021 reporting period, marketed energy products include the following:

**Gas products:**

- Liquefied natural gas (LNG).
- Pipeline gas.
- Bio-gas.

<b>Scope cont.</b>	<p><b>Refined products:</b></p> <ul style="list-style-type: none"> <li>• Natural gas liquids (NGLs).</li> <li>• Liquefied petroleum gas (LPG).</li> <li>• Gasoline (including associated bio-content/ETBE<sup>b</sup> where applied).</li> <li>• Diesel (including associated bio-content where applied).</li> <li>• Aviation fuels.</li> <li>• Fuel oil.</li> <li>• Petroleum coke.</li> <li>• Other middle distillates, including gas oil and kerosene.</li> </ul> <p><b>Bioproducts:</b></p> <ul style="list-style-type: none"> <li>• Bio-ethanol from our biofuel businesses (including ethanol in Brazil).</li> <li>• Sustainable aviation fuel (SAF) / Biojet.</li> </ul> <p><b>Power products:</b></p> <ul style="list-style-type: none"> <li>• Bio.</li> <li>• Renewable (solar / wind).</li> <li>• Electric vehicle power sales.</li> <li>• Power and steam sales associated with bp assets (for example, from bp refineries).</li> <li>• Other power (for example marketed power via Trading &amp; Shipping).</li> </ul> <p>Crude oil does not count as an energy product except in the rare cases where it is used by an end user to satisfy an energy demand.</p>
<b>Units</b>	gCO <sub>2</sub> e/MJ.

a On 27 February 2022, following the military action in Ukraine, the bp board announced that bp intends to exit its 19.75% shareholding in Rosneft Oil Company (Rosneft).

b Ethyl Tertiary Butyl Ether

## 4. Net zero sales (aim 3)

<b>Method</b>	<p>The average carbon emissions intensity of bp marketed energy products is calculated as follows:</p> $\text{Average Carbon Intensity} = \frac{\sum_i (\text{Carbon Intensity})_i \times \text{Energy}_i}{\sum_i \text{Energy}_i}$ <p>Where:                  (Carbon Intensity)<sub>i</sub> is the carbon intensity of energy product;                  Energy<sub>i</sub> is the marketed energy of product;</p> <p><b>Gas products, refined products and bioproducts</b>                  For gas products, refined products, and bioproducts, the methodology applied covers the lifecycle emissions on a 'well to wheel' basis. The marketed products carbon intensity of our refined products, gas products and bioproducts is calculated as follows:</p> $(\text{Carbon Intensity})_i = \frac{(\text{WTT emissions})_i + (\text{End-use emissions})_i}{\text{Energy}_i}$ <p>Where:                  (WTT emissions)<sub>i</sub> is the well to tank emissions of energy product, calculated based on average industry emission factors.                  (End-use emissions)<sub>i</sub> is the end-use carbon emissions of energy product <sub>i</sub>. For bioproducts, the end-use carbon emissions are assumed to be zero. For gas and refined products, the end-use carbon emissions are calculated assuming 100% stoichiometric conversion of elemental carbon to CO<sub>2</sub>.                  Energy<sub>i</sub> is the energy of product <sub>i</sub>, calculated based on the net calorific value of the product.</p>
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<b>Method cont.</b>	<p>Industry standard factors, such as emission factors, are applied for each energy product's value chain. Industry factors are taken from a combination of sources, meaning that the basis of the emissions can vary by product/value chain element. For example:</p> <ul style="list-style-type: none"> <li>• Embodied emissions from capital goods and assets are excluded for the fossil fuel products but are included for solar/wind products.</li> <li>• The emissions factor used for corn ethanol includes induced land use change. The emissions factor used for sugar cane ethanol does not include induced land use change due to differences in methodologies used by the USEPA and the European Commission.</li> </ul> <p><b>Power products</b>                  For power products, bp uses a fossil fuel equivalency factor, following the approach in the bp Statistical Review of World Energy. The carbon intensity of our marketed power products is calculated as follows:</p> $(\text{Carbon Intensity})_i = \frac{(\text{CO}_2\text{e Emissions})_i}{(\text{Fossil Equivalency of Sold Energy})_i}$ <p>Where:                  (CO<sub>2</sub>e Emissions)<sub>i</sub> is determined based on the sold/exported power and local grid factor or lifecycle emission factor (for Solar/Wind).                  (Fossil Equivalency of Sold Energy)<sub>i</sub> is determined by applying a fossil equivalency factor to the sold/exported power, based on conversion efficiencies described in the bp Statistical Review of World Energy 2021.</p> <p><b>Aggregate lifecycle emissions associated with marketing sales of energy products</b>                  Aggregate lifecycle GHG emissions associated with bp's marketing sales of energy products, as determined in the calculation of the average emissions intensity of our marketed energy products.</p>
<b>Source</b>	<p>The calculation is performed by the bp Strategy, Sustainability &amp; Ventures (SS&amp;V) carbon ambition team and is subject to independent third-party assurance for use in external reporting.</p>

## 5. Reducing methane (aim 4)

Aim 4 is to install methane measurement at all our existing major oil and gas processing sites by 2023, publish the data, and then drive a 50% reduction in methane intensity of our operations.

### 5.1 Methane intensity (%)

<b>Definition</b>	Total methane emissions from upstream oil and gas activities operated by bp as a percentage of the marketed gas production from those operations.  Marketed gas production is gas production from operated, producing upstream assets, that reaches a market irrespective of whether bp has custody of the gas.
<b>Scope</b>	Reporting period 1 January to 31 December 2021.  Methane emissions: all operated upstream assets report methane emissions on a 100% basis including emissions from operated upstream oil and gas terminals and LNG facilities.  All operated upstream producing assets are in-scope except: <ul style="list-style-type: none"> <li>• Exploration drilling activity in new regions.</li> <li>• Non-producing assets e.g. offices.</li> <li>• Major new projects prior to first production (oil or gas).</li> </ul> Marketed gas production: all upstream gas reaching a market from bp operated, upstream assets, whether or not this is bp-owned product, and includes gas production from natural gas wells and associated gas from oil production wells. Throughput from bp-operated oil and gas terminals is excluded to avoid double counting despite their associated methane emissions being included in the metric.
<b>Units</b>	% in volume basis.
<b>Method</b>	Methane data is required to be submitted in accordance with the bp Practice Submission of Environmental and Social Performance Data Group Defined Practice (GDP) 8.1 which is broadly based on the GHG Protocol Corporate Standard and the IPIECA Petroleum Industry Guidelines for Reporting Greenhouse Gas Emissions 2nd Edition, May 2011. The bp Procedure, Calculations and Methodologies for Environmental Performance Data (GPRO 8.1-0001) sets out the methodologies we use for calculation of GHG data which are based on the API Compendium of GHG Emissions Methodologies for the Oil and Gas Industry and industry recognized references, such as the IPCC guidelines and US EPA publications.

<b>Method cont.</b>	The responsibility for calculating and submitting methane emissions to be used for reporting is assigned to individual bp facilities and business departments, which are termed 'Reporting Units' (RUs). RUs submit a quarterly breakdown of methane data by source directly into the group reporting tool, OneCSR. For the end of year submission, they are required to account for all significant variances from the previous year under specific categories and identify the sustainable emission reductions for the reporting period, where applicable.  The RUs follow a formal data submission sign-off process and are responsible for ensuring data has been reported in accordance with the requirements. Once submitted, methane data is reviewed at corporate level by subject matter experts.  The RUs quantify their emissions of methane based on the methodologies and requirements described in our requirements, which also specify a 'hierarchy' of possible approaches, with a bias towards direct measurement. Where local regulatory requirements differ from the specified methodologies, RUs may choose to submit data using local regulatory methodologies.  In the event the regulatory methodology for a significant source results in a figure judged to be less accurate than the specified methodologies then, where this is judged to be significant, the RU should use the bp specified calculation methodologies in its submission to the group reporting tool, OneCSR.  Marketed gas data is provided by the reservoir development team or directly from specific bp entities where marketed gas data is not available from the central reservoir development team.  Subject matter experts perform the intensity calculation whereby the volume of methane emissions is divided by the volume of marketed gas.  Methane intensity calculation is consistent with the Oil and Gas Climate Initiative (OGCI) methane intensity methodology.
<b>Source</b>	The methane intensity metric is provided using the methane data from the group reporting tool, OneCSR, and the marketed gas data provided by the reservoir development team or directly from specific bp entities.

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