

# Net zero

Metric	Unit	2019	2020	2021	2022	2023
<b>Net zero aims</b>						
Aim 1 – Scope 1 (direct) and Scope 2 (indirect) greenhouse gas emissions <sup>a b</sup>	MtCO <sub>2</sub> e	54.5	45.5	35.6	31.9	<b>32.1</b>
Aim 2 – Emissions from the carbon in our upstream oil and gas production (our Scope 3 aim) <sup>c</sup>	MtCO <sub>2</sub>	360.9	327.6	303.6	306.7	<b>314.9</b>
Aim 3 – Average carbon intensity of our sold energy products <sup>d e</sup>	gCO <sub>2</sub> e/MJ	79	77	78	77	<b>77</b>
Refined energy products carbon intensity <sup>f</sup>	gCO <sub>2</sub> e/MJ	95	92	92	92	<b>92</b>
Gas products carbon intensity <sup>f</sup>	gCO <sub>2</sub> e/MJ	68	67	67	67	<b>67</b>

a

Operational control data comprises 100% of emissions from activities operated by bp, going beyond the Ipieca guidelines by including emissions from certain other activities such as contracted drilling activities. Read more: [bp.com/basisofreporting](#).

b

2019 baseline changed from 54.4MtCO<sub>2</sub>e for consistency in rounding.

c

Calculated carbon dioxide (CO<sub>2</sub>) emissions from the assumed stoichiometric combustion of upstream production of crude oil, natural gas and natural gas liquids (NGLs), based on bp's net share of production, excluding bp's share of production in Rosneft. On 27 February 2022, bp announced that it intends to exit its 19.75% shareholding in Rosneft Oil Company (Rosneft). bp ceased equity accounting for Rosneft from this date. These emissions are equivalent to the GHG Protocol, Scope 3, category 11, within the selected boundary of bp's net share of upstream production of oil and gas.

d

Rate of GHG emissions estimated on a lifecycle basis from the use, production, and distribution of sold energy products <sup>★</sup> per unit of energy (MJ) delivered. For this purpose, lifecycle covers the 'well-to-wheel' emissions of fuel products and the 'well-to-wire' emissions of power products, and excludes embodied emissions from capital goods and assets.

e

Previously reported aim 3 figures for the period 2019-2022 have been restated to correct misstatements in sales data identified through business reviews and digital improvement projects. The restatement does not alter the previously disclosed average lifecycle carbon intensity of our sold energy products <sup>★</sup>. For more detail on how this metric is calculated see the Basis of Reporting: [bp.com/basisofreporting](#).

Metric	Unit	2019	2020	2021	2022	2023
Bioproducts carbon intensity <sup>f</sup>	gCO <sub>2</sub> e/MJ	47	44	43	43	<b>40</b>
Power products carbon intensity <sup>f</sup>	gCO <sub>2</sub> e/MJ	56	58	56	52	<b>50</b>
Aggregate lifecycle emissions associated with sales of energy products <sup>g</sup>	MtCO <sub>2</sub> e	1,597	1,379	1,385	1,315	<b>1,395</b>
Aggregate energy associated with sales of energy products <sup>h</sup>	PJ	20,270	17,946	17,838	16,999	<b>18,207</b>
Aim 4 – Methane intensity <sup>★ i j</sup>	%	0.14	0.12	0.07	0.05	<b>0.05</b>
Aim 5 – Transition growth investment <sup>★ k</sup>	\$ million	634	995	2,437	4,911	<b>3,779</b>

f

Previously reported aim 3 figures for the period 2019-2022 have been restated to correct misstatements in sales data identified through business reviews and digital improvement projects. The restatement does not alter the previously disclosed carbon intensity of product categories (refined, gas, bio and power products), with the exception of the power products carbon intensity for 2019 and 2020, which has changed.

g

Aggregate lifecycle GHG emissions associated with bp's sold energy products <sup>★</sup>, as determined in the calculation of the average carbon intensity of our sold energy products <sup>★</sup>. For this purpose, lifecycle covers the 'well-to-wheel' emissions of fuel products and the 'well-to-wire' emissions of power products, and excludes embodied emissions from capital goods and assets. Previously reported values for this metric (2019-2022) have been restated to correct misstatements in sales data identified through business reviews and digital improvement projects.

h

Aggregate energy associated with sales of energy products, as determined in the calculation of the average carbon intensity of our sold energy products, with electricity represented as fossil equivalence of sold energy. 1 PJ (Petajoule) = 1 billion (10<sup>9</sup>) MJ. Previously reported values for this metric (2019-2022) have been restated to correct misstatements in sales data identified through business reviews and digital improvement projects.

i

Methane intensity <sup>★</sup> refers to the amount of methane emissions from bp's operated upstream oil and gas assets as a percentage of the total gas that goes to market from those operations. Our methodology is aligned with the Oil and Gas Climate Initiative's (OGCI).

j

Methane intensity <sup>★</sup> is currently calculated using our existing methodology and, while it reflects progress in reducing methane emissions, will not directly correlate with progress towards delivering the 2025 target under aim 4.

k

Our transition growth <sup>★</sup> engines are bioenergy, convenience, EV charging, renewables and power, and hydrogen.

★ See the glossary in the *bp Sustainability Report 2023* **pages 59-61**

# Greenhouse gas emissions and energy

Metric	Unit	2019	2020	2021	2022	2023	Metric	Unit	2019	2020	2021	2022	2023
<b>GHG – Operational control <sup>1m</sup></b>							<b>GHG – Equity share <sup>1w</sup></b>						
Scope 1 (direct) greenhouse gas emissions <sup>n</sup>	MtCO <sub>2</sub> e	49.2	41.7	33.2	30.4	<b>31.1</b>	Scope 1 (direct) greenhouse gas emissions <sup>n</sup>	MtCO <sub>2</sub> e	46.0	41.3	36.5	33.9	<b>31.9</b>
Exploration, production and LNG	MtCO <sub>2</sub> e	–	–	15.5	13.8	<b>15.2</b>	Exploration, production and LNG <sup>x</sup>	MtCO <sub>2</sub> e	–	–	17.7	15.9	<b>14.8</b>
Refining and chemicals	MtCO <sub>2</sub> e	–	–	16.9	15.9	<b>15.1</b>	Refining and chemicals	MtCO <sub>2</sub> e	–	–	17.5	16.3	<b>15.7</b>
Other	MtCO <sub>2</sub> e	–	–	–	0.7	<b>0.8</b>	Other <sup>x</sup>	MtCO <sub>2</sub> e	–	–	–	1.7	<b>1.5</b>
Scope 1 (direct) carbon dioxide emissions	MtCO <sub>2</sub> e	46.8	39.8	32.0	29.7	<b>30.2</b>	Scope 1 (direct) carbon dioxide emissions	MtCO <sub>2</sub> e	43.0	39.1	34.8	32.6	<b>30.5</b>
Exploration, production and LNG	MtCO <sub>2</sub> e	–	–	14.4	13.1	<b>14.3</b>	Exploration, production and LNG <sup>x</sup>	MtCO <sub>2</sub> e	–	–	16.0	14.6	<b>13.5</b>
Refining and chemicals	MtCO <sub>2</sub> e	–	–	16.9	15.9	<b>15.1</b>	Refining and chemicals	MtCO <sub>2</sub> e	–	–	17.5	16.2	<b>15.6</b>
Other	MtCO <sub>2</sub> e	–	–	–	0.7	<b>0.7</b>	Other <sup>x</sup>	MtCO <sub>2</sub> e	–	–	–	1.7	<b>1.4</b>
Scope 1 (direct) methane emissions	Mt	0.1	0.07	0.05	0.03	<b>0.03</b>	Scope 1 (direct) methane emissions	Mt	0.12	0.09	0.07	0.05	<b>0.05</b>
Exploration, production and LNG	Mt	–	–	0.04	0.03	<b>0.03</b>	Exploration, production and LNG	Mt	–	–	0.07	0.05	<b>0.05</b>
Refining and chemicals	Mt	–	–	0.00	0.00	<b>0.00</b>	Refining and chemicals	Mt	–	–	0.00	0.00	<b>0.00</b>
Other	Mt	–	–	–	0.00	<b>0.00</b>	Other	Mt	–	–	–	0.00	<b>0.00</b>
Sustainable GHG emissions reductions ★ (Scope 1 and 2) <sup>o</sup>	MtCO <sub>2</sub> e	1.4	1.0	1.6	1.5	<b>0.9</b>	Scope 2 (indirect) emissions <sup>p</sup>	MtCO <sub>2</sub> e	5.7	4.2	2.6	1.6	<b>1.5</b>
Scope 2 (indirect) emissions <sup>p,q</sup>	MtCO <sub>2</sub> e	5.2	3.8	2.4	1.4	<b>1.0</b>	Exploration, production and LNG	MtCO <sub>2</sub> e	–	–	0.2	0.2	<b>0.1</b>
Exploration, production and LNG <sup>q</sup>	MtCO <sub>2</sub> e	–	–	0.0	0.1	<b>0.1</b>	Refining and chemicals	MtCO <sub>2</sub> e	–	–	2.0	1.1	<b>0.6</b>
Refining and chemicals	MtCO <sub>2</sub> e	–	–	2.2	1.2	<b>0.6</b>	Other	MtCO <sub>2</sub> e	–	–	–	0.4	<b>0.8</b>
Other	MtCO <sub>2</sub> e	–	–	–	0.2	<b>0.4</b>	Greenhouse gas intensity (Scope 1 and 2)						
Greenhouse gas intensity (Scope 1 and 2)							Exploration, production and LNG <sup>x,y</sup>	tCO <sub>2</sub> e per thousand boe of production	–	–	22.4	19.9	<b>17.6</b>
Exploration, production and LNG <sup>r</sup>	tCO <sub>2</sub> e per thousand boe of production	–	–	15.9	14.2	<b>15.7</b>	Refineries <sup>z</sup>	tCO <sub>2</sub> e per utilized equivalent distillation capacity	–	–	1,067	1,022	<b>1,000</b>
Refineries <sup>s</sup>	tCO <sub>2</sub> e per utilized equivalent distillation capacity	–	–	1,060	1,028	<b>1,003</b>	Petrochemicals	tCO <sub>2</sub> e per thousand tonnes of production	–	–	688	653	<b>741</b>
Petrochemicals <sup>t</sup>	tCO <sub>2</sub> e per thousand tonnes of production	–	–	688	653	<b>741</b>							
Methane intensity ★ <sup>u</sup>	%	0.14	0.12	0.07	0.05	<b>0.05</b>							
Flaring <sup>v</sup>	kt	1,395	831	967	654	<b>861</b>							

# Greenhouse gas emissions and energy

Metric	Unit	2019	2020	2021	2022	2023
<b>Energy – Operational control<sup>l m</sup></b>						
Energy consumption <sup>aa</sup>	GWh	–	–	128,805	121,697	<b>124,770</b>
Exploration, production and LNG	GWh	–	–	46,033	43,748	<b>46,215</b>
Refining and chemicals	GWh	–	–	79,177	74,589	<b>70,974</b>
Other	GWh	–	–	–	3,361	<b>7,582</b>
<b>Energy intensity</b>						
Exploration, production and LNG <sup>bb</sup>	GJ per thousand boe of production	–	–	169.8	162.1	<b>171.0</b>
Refineries <sup>cc</sup>	Energy intensity performance index (indexed to 2010)	104.5	106.5	102.8	103.4	<b>104.0</b>
Petrochemicals <sup>dd</sup>	GJ per tonnes of production	–	–	11.5	11.8	<b>12.7</b>
<b>Energy consumption – Streamlined Energy and Carbon Reporting (SECR)<sup>ee</sup></b>						
UK and offshore <sup>ff</sup>	GWh/base units kWh	–	7,005	4,386	4,376	<b>4,688</b>
Global (excluding UK and offshore) <sup>gg</sup>	GWh/base units kWh	–	172,999	124,419	117,321	<b>120,082</b>

<sup>l</sup> bp total figures and “Exploration, production and LNG” data for GHG emissions and energy include bpx energy (onshore US operations).

<sup>m</sup> Operational control data comprises 100% of emissions from activities operated by bp, going beyond the Ipeca guidelines by including emissions from certain other activities such as contracted drilling activities. Read more: [bp.com/basisofreporting](https://bp.com/basisofreporting).

<sup>n</sup> We provide data on GHG emissions material to our businesses on a carbon dioxide-equivalent basis. This includes CO<sub>2</sub> and methane for Scope 1 emissions.

<sup>o</sup> Sustainable emissions reductions\* (SERs) result from actions or interventions that have led to ongoing reductions in Scope 1 (direct) and/or Scope 2 (indirect) greenhouse gas (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 reduction 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.

<sup>p</sup> Scope 2 emissions on a market basis.

<sup>q</sup> Figure for 2022 updated to reflect use of renewable energy in UK and offshore in 2022.

<sup>r</sup> Scope 1 (direct) and Scope 2 (indirect) GHG emissions in tCO<sub>2</sub>e from bp operated exploration, production and LNG assets per thousand boe of upstream oil and gas production.

<sup>s</sup> Scope 1 (direct) and Scope 2 (indirect) GHG emissions in tCO<sub>2</sub>e from bp operated refineries per utilized equivalent distillation capacity.

<sup>t</sup> Scope 1 (direct) and Scope 2 (indirect) GHG emissions in tCO<sub>2</sub>e from bp operated petrochemical facilities per thousand tonnes of petrochemicals produced.

<sup>u</sup> Methane intensity\* refers to the amount of methane emissions from bp's operated upstream oil and gas assets as a percentage of the total gas that goes to market from those operations. Our methodology is aligned with the Oil and Gas Climate Initiative's (OGCI).

<sup>v</sup> We report the total hydrocarbons flared from our upstream operations.

<sup>w</sup> 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. On 27 February 2022, bp announced that it intends to exit its 19.75% shareholding in Rosneft Oil Company (Rosneft). bp ceased equity accounting for Rosneft from this date.

<sup>x</sup> Restatement of 2022 data is due to reporting unit reassignment following portfolio changes, total 2022 equity share Scope 1 greenhouse gas emissions have not changed.

<sup>y</sup> bp equity Scope 1 (direct) and Scope 2 (indirect) GHG emissions in tCO<sub>2</sub>e from exploration, production and LNG assets per thousand boe of upstream oil and gas production.

<sup>z</sup> bp equity Scope 1 (direct) and Scope 2 (indirect) GHG emissions in tCO<sub>2</sub>e from refineries per utilized equivalent distillation capacity.

<sup>aa</sup> Total energy consumption in line with Streamlined Energy and Carbon Reporting (SECR).

<sup>bb</sup> Total energy consumption in GJ from bp operated exploration, production and LNG assets per thousand boe of upstream oil and gas production.

<sup>cc</sup> Based on Solomon Associates Energy Intensity Index methodology.

<sup>dd</sup> Total energy consumption in GJ from bp operated petrochemicals facilities per thousand tonnes of petrochemical production. This replaces the previous petrochemicals (energy intensity) metric which included total primary energy consumption in the numerator.

<sup>ee</sup> Energy content of flared or vented gas is excluded from energy consumption reported as although they reflect loss of energy resources, they do not reflect energy use required for production or manufacturing of products.

<sup>ff</sup> UK and offshore energy consumption 4,688,000,000kWh in 2023.

<sup>gg</sup> Global (excluding UK and offshore) energy consumption 120,082,000,000kWh in 2023.

★ See the glossary in the *bp Sustainability Report 2023* **pages 59-61**