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BHP GHG Emissions Calculation Methodology 2024

Introduction

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Important information

This document describes the boundaries, methodologies, assumptions and key references used to prepare BHP's reported operational energy consumption and Scopes 1, 2 and 3 emissions inventory (adjusted and unadjusted) for FY2024.

This combines with the published data on Scopes 1, 2 and 3 emissions in relation to our business to meet the disclosure requirements of the Global Reporting Initiative (GRI) standard GRI 305. Our disclosures are also aligned with the recommendation of the Task Force on Climate-Related Financial Disclosures (TCFD) that organisations disclose "Scope 1, Scope 2, and, if appropriate, Scope 3 greenhouse gas emissions, and the related risks".

Our reported GHG emission inventories for Scope 3 emissions and for Scopes 1 and 2 emissions accounted for using the financial control or equity share approaches are subject to inherent uncertainties arising from reliance on data obtained from third parties, or necessarily estimated or assumed, and may not be accurate or complete.

There may be differences in the manner that third parties calculate or report GHG emissions or operational energy consumption data compared to BHP, which means third-party data may not be comparable to our data.

Definitions

When we refer to operational greenhouse gas (GHG) emissions, we mean Scopes 1 and 2 emissions from our operated assets. When we refer to value chain GHG emissions, we mean Scope 3 emissions.

Adjustments for comparability to assess progress

Adjusted means calculated to present the GHG emissions data for a time period (such as a baseline year or reporting year) as though relevant changes took effect from the start of that period even though they occurred during or not until after the end of the period. Unless expressly stated otherwise, relevant changes are all acquisitions, divestments and/or GHG emission calculation methodology changes.

Where applied, such adjustments are intended to facilitate more meaningful comparability of performance across multiple years. We apply adjustments when we present GHG emissions data for the purpose of assessment of progress against our GHG emissions targets and goals to enable this 'like for like' comparison.

Unadjusted means calculated to present the GHG emissions data for a reporting year so that any relevant changes that occurred during the year (including acquisitions, divestments and/or methodology changes) are applied only from the date they took effect.

Assurance

EY was engaged by BHP to provide reasonable assurance over our Scopes 1 and 2 emissions and progress against our GHG emissions targets and goals and limited assurance over our operational energy consumption and over Scope 3 emissions, as reported in the BHP Climate Transition Action Plan 2024, BHP Annual Report 2024 and the BHP ESG Standards and Databook 2024.

For more information refer to the:

- BHP Annual Report 2024 Operating and Financial Review 6.13 (Independent Assurance Report) available at bhp.com/investors/annual-reporting
- BHP Climate Transition Action Plan 2024, available at bhp.com/CTAP2024
- BHP ESG Standards and Databook 2024, available at bhp.com/climate

Greenhouse Gas Protocol alignment

We use methodologies consistent with the GHG Protocol: A Corporate Accounting and Reporting Standard, with reference to additional guidance from the GHG Protocol: Scope 2 Guidance (An amendment to the GHG Protocol Corporate Standard) (Scope 2 Guidance), GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (Scope 3 Standard) and GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (Scope 3 Guidance).

We also review other standards and sources of GHG emissions guidance, including Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories, International Standard ISO 14064-1, the Sustainability Accounting Standards Board (SASB) and the recommendations of the Financial Stability Board's TCFD including its Guidance on Metrics, Targets and Transition Plans.

Greenhouse Gas Protocol emission Scopes

The GHG Protocol Corporate Accounting and Reporting Standard classifies corporate GHG emissions into three 'Scopes':

- Scope 1 emissions are direct GHG emissions from operations that are owned or controlled by the reporting company (e.g. for BHP, emissions from fuel consumed by haul trucks at our mine sites)
- Scope 2 emissions are indirect GHG emissions from the generation of purchased energy consumed by a company (e.g. GHG emissions from electricity BHP buys from the grid for use at our mine sites)
- Scope 3 emissions are all other indirect GHG emissions (not included in Scope 2) that occur in the value chain of the reporting company (e.g. for BHP, GHG emissions from our customers processing our iron ore to steel)

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Organisational boundaries

Energy consumption and Scopes 1 and 2 emissions from our operated assets

Reported operational energy consumption and Scopes 1 and 2 emissions totals are based on the organisational consolidation boundaries shown in the table on the right, consistent with the GHG Protocol Corporate Accounting and Reporting Standard definitions.

Scope 3 emissions

Reported Scope 3 emissions are estimated on an equity basis for downstream GHG emissions. For the upstream GHG emissions component, the boundary is defined on a category-by-category basis due to data limitations. For information about the boundary approach for each Scope 3 emissions category, refer to the 'Value chain GHG emissions' section beginning on page 15.

Notes

- Scopes 1 and 2 emissions from our non-operated joint venture interests are included in both the financial control GHG emissions inventory and the equity share GHG emissions inventory, where relevant criteria are met. This should be noted when considering and comparing the different inventories reported under different boundary definitions
- We present energy consumption and GHG emissions data inclusive of divestments up to the completion date or effective economic date (as applicable) of the divestment and inclusive of acquired operations from the date of acquisition, unless otherwise specified. This applies to our unadjusted reported Scopes 1, 2, and 3 emissions inventories
- Energy consumption and GHG emission inventories for Scope 3 emissions and for Scopes 1 and 2 emissions that are accounted for using the financial control or equity share approaches are subject to inherent uncertainties due to reliance on data obtained from third parties, or necessarily estimated or assumed. As such, they may not be accurate or complete.

Organisational boundaries

Boundary	BHP approach
Operational control (for energy consumption and GHG emissions)	– 100 per cent of energy consumption and Scopes 1 and 2 emissions from operations over which BHP has operational control (including any one or more subsidiaries in the BHP group of companies) – Excludes energy consumption and GHG emissions from operations in which BHP owns an interest but does not have operational control – The operational control approach is used for our operational GHG emissions reduction medium-term target and long-term net zero goal

Financial control (only for GHG emissions)	– Scopes 1 and 2 emissions based on the accounting treatment in our Consolidated Financial Statements are as follows:
	  – For operations accounted for as subsidiaries, 100 per cent of GHG emissions regardless of equity interest owned
	  – For operations accounted for as a joint operation, percentage of GHG emissions equivalent to BHP's interest in the operation
	  – For investments accounted for under the equity method as an investment in a joint venture, percentage of GHG emissions equivalent to BHP's interest in the joint venture
	– Excludes GHG emissions from other investments that are accounted for in our Consolidated Financial Statements under the equity method (i.e. not joint ventures)

Equity share (only for GHG emissions)	Our equity share of Scopes 1 and 2 emissions for operations in which BHP owns an interest

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Changes from FY2023

All GHG emissions data

FY2023 data has been re-calculated to include two months of data from former OZ Minerals Australian operations from the date of acquisition (i.e. 2 May 2023. Former OZ Minerals Australian operations are included in FY2024 reported inventories. Former OZ Minerals Brazil data has been excluded due to ongoing strategic review of these assets by BHP. A high-level materiality assessment has been conducted to confirm that energy consumption and operational GHG emissions from these operations are immaterial to BHP's totals (<0.01%).

Scope 3 emissions, Categories 4 and 9 – maritime transport component

In FY2024, we updated the emission factors used to calculate GHG emissions from maritime transport and we now use the EU Regulation 2023/1805. These emission factors have been used to calculate (or recalculate) maritime transport GHG emissions from F2020 to FY2024. The British Standards Institution EN 16258 standard (the source of the emission factors we previously used) was withdrawn in CY2023.

Scope 3 emissions, Category 9 – non-maritime transport component

We reviewed the methodology for calculating GHG emissions for the portside transport of our iron ore in China, which began in FY2023. We have updated the methodology to more accurately map how our products get transported from port to our customers via a combination of road, rail and barge. This methodology has been applied to FY2023 and FY2024 data.

Value chain GHG emissions (Scope 3 emissions) targets and goals baseline years and reference years

We have adjusted the baseline years, references years and interim performance of our value chain GHG emissions targets and goals for acquisition, divestments and methodology changes, so that our performance can be measured on a more consistent basis.

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Energy consumption

Energy consumption: Operational control

Description

Energy consumed in activities under BHP's operational control.

Calculation boundary

- 100 per cent of energy consumed in activities under BHP's operational control
- Includes all fuels and electricity consumed: in the operation of vehicles and machinery; in onsite heat, steam or electricity generation activities; as a chemical or process feedstock; or for any other purpose
- Includes energy consumed from renewable sources (see Calculation methodology), which is also reported as a separate metric
- Aligns with the organisational boundary used to report operational GHG emissions

Exclusions

Former OZ Minerals Brazil data has been excluded due to ongoing strategic review of these assets by BHP. A high-level materiality assessment has been conducted to confirm that energy consumption and operational GHG emissions from these operations are immaterial to BHP's totals (<0.01%).

References

- GHG Protocol: A Corporate Accounting and Reporting Standard; ghgprotocol.org/corporate-standard
- GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard; ghgprotocol.org/scope-2-guidance
- Australia's National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 (as amended in July 2023); cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/report-emissions-and-energy/amendments-to-national-greenhouse-and-energy-reporting-legislation
- Other jurisdictional mandatory reporting legislation, where applicable

Calculation methodology

Our operated assets record energy consumption quantities by fuel type (e.g. diesel, natural gas) throughout the year, using sources such as supplier invoices, metering, stockpile changes and other industry standard practices.

All fuel quantities are converted to energy-based units using energy content factors specific to each fuel (e.g. gigajoules per kilolitre for diesel), sourced from appropriate references. Electricity quantities are not required to be converted as consumption is recorded in energy-based units by definition.

Operational energy consumption from renewable sources includes:

- Direct consumption of energy from renewable sources within our operational control: In FY2023, this included a small volume of hydrotreated vegetable oil associated with a trial at Western Australia Iron Ore's Yandi iron ore operations
- Third-party supplied renewable electricity as evidenced by renewable energy certificates (REC) or supplier-provided documentation, in line with the Scope 2 Guidance

Energy consumption for facilities already reporting under mandatory local regulatory programs are required to use the same energy content factors for reporting under our operational control boundary. This ensures that a single GHG emission inventory is maintained for consistency and efficiency. Local regulatory programs are applicable to the majority of our energy consumption within our operational control boundary. Please refer to the Scope 1 emissions section of this document for further detail on the mandatory regulatory programs applicable to our operations.

For operations in Chile, final validation for surrender of the rights to claim renewable energy attributes occurs on a calendar year basis, while we report on a financial year basis. We review our reported renewable energy usage at the close of the calendar year and restate in the next BHP Annual Report if any variation is found with the Chilean REC system.

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Operational GHG emissions
(Scopes 1 and 2 emissions from our operated assets)

Scope 1 emissions: Operational control

Description

GHG emissions released from activities under BHP's operational control.

Calculation boundary

- 100 per cent of Scope 1 GHG emissions in activities under our operational control
- For our operated assets, all carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), sulphur hexafluoride (SF_6), nitrogen trifluoride (NF_3), perfluorocarbon (PFC) emissions and hydrofluorocarbon (HFC) emissions i.e. all relevant GHG emissions listed under the United Nations Framework Convention on Climate Change and the Kyoto Protocol
- We currently use the global warming potentials (GWP) from the IPCC Assessment Report 5 across all operated assets. NF_3 is a synthetic GHG mainly used in the manufacturing of semi-conductors and is currently not relevant for our reporting purposes

Exclusions

Former OZ Minerals Brazil data has been excluded due to ongoing strategic review of these assets by BHP. A high-level materiality assessment has been conducted to confirm that energy consumption and operational GHG emissions from these operations are immaterial to BHP's totals (<0.01%).

References

- GHG Protocol: A Corporate Accounting and Reporting Standard; ghgprotocol.org/corporate-standard
- Australia's National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 (as amended in July 2023); cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/report-emissions-and-energy/amendments-to-national-greenhouse-and-energy-reporting-legislation
- Other jurisdictional mandatory reporting legislation, where applicable

Calculation methodology

Our operated assets record Scope 1 emissions by source throughout the year using methodologies and emission factors appropriate to each source, including as follows:

- **GHG emissions from the combustion of fossil fuels for energy**: These GHG emissions are calculated by multiplying the quantity of fuel consumed by the applicable emission factor for the fuel. The emission factors are sourced from appropriate references or, in some cases, from fuel sampling and analysis
- **GHG emissions from use of fossil fuels as a feedstock to a chemical process**: These GHG emissions are calculated using 'carbon balance' methodologies sourced from appropriate references and involve estimation of the total carbon content of inputs to the process and total carbon content of products and by-products from the process. The difference in carbon content is assumed to be converted to CO_2 through the process. Methodologies and carbon contents for inputs and products are sourced from appropriate references
- **Fugitive methane emissions from extraction of natural resources**: These GHG emissions are either metered directly (e.g. gas flow measurements from ventilation or drainage systems installed at underground coal mines) or calculated using source-specific methodologies and emission factors based on the specific characteristics of the resource. The methods used to measure fugitive methane emissions at our coal mining operations are shown on the next page. These methods are periodically reviewed and may change in the future

Scope 1 emissions for facilities already reporting under mandatory local regulatory programs are required to use the same emission factors and methodologies for reporting under our operational control boundary. This ensures that a single GHG emission inventory is maintained for consistency and efficiency. Local regulatory programs are applicable to the majority of our Scope 1 emissions inventory within our operational control boundary, as shown on the next page, noting that:

- A local regulatory program in this context refers to any scheme requiring GHG emissions to be calculated using mandated references (e.g. the Green Tax legislation in Chile, which requires GHG emissions to be calculated using the IPCC factors) or mandated factors (e.g. the Australian NGER or US Greenhouse Gas Reporting Program (GHGRP), which publish factors specific to the programs)
- In the absence of mandatory local regulations, the Australian NGER (Measurement) Determination has been set as the default source for factors and methodologies for consistency with the majority of the GHG emission inventory
- In FY2024, the GHG emissions covered under emissions-limiting regulation included Scope 1 emissions from our facilities covered by the Safeguard Mechanism administered by the Clean Energy Regulator in Australia, and the distillate and gasoline emissions from the turbine boilers at the cathode plant at Escondida covered by the Green Tax legislation in Chile

The measurement of diesel consumption at Escondida is currently under review. A restatement to this data may be made as part of the FY2025 Annual Reporting Suite.

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Scope 1 emissions: Operational control continued

Measurement methods for our coal mine fugitive methane emissions

Asset and mine	Type	NGER (Measurement) Determination 2008
BHP Mitsubishi Alliance (BMA): Blackwater[1]	Open-cut	Method 1 – Default emission factor applied to run of mine coal extraction
BMA: Broadmeadow	Underground	Gas drainage (flared): Method 1 – Default emission factors applied to measured quantities of gas flared Gas drainage (vented): Method 4 – The direct measurement of emissions released from the drainage of coal mine gas using continuous monitoring of the gas stream Underground ventilation: Method 4 – The direct measurement of emissions released from the extraction of coal using continuous and periodic monitoring of the gas stream Post-mining coal handling: Method 1 – Default emission factor applied to run of mine coal extraction
BMA: Caval Ridge, Daunia[1], Goonyella Riverside, Peak Downs, Saraji, Saraji South	Open-cut	Method 2 – Quantities of methane emissions contained in coal extracted is calculated based on measured in-situ gas content and composition
New South Wales Energy Coal (NSWEC) – Mt Arthur Coal	Open-cut	Method 2 – Quantities of methane emissions contained in coal extracted is calculated based on measured in-situ gas content and composition

[1] Blackwater and Daunia mines were sold by BMA and are no longer part of our operated assets from the completion date of the divestment (2 April 2024).

Mandatory reporting programs applicable to our Scope 1 emissions (sources for emission factors and calculation methods)

Asset	Location	Local regulations
BMA, NSWEC, Copper South Australia, Western Australia Nickel, Western Australia Iron Ore	Australia	NGER scheme
Escondida, Pampa Norte	Chile	Green Tax legislation (referencing IPCC factors)
Jansen potash project	Canada	Canadian GHGRP (referencing IPCC factors)

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Scope 2 emissions: Operational control

Description

GHG emissions associated with the third-party generation of electricity consumed in activities under BHP's operational control.

Calculation boundary

Scope 2 emissions from all electricity supplied for our operated assets.

Exclusions

Former OZ Minerals Brazil data has been excluded due to ongoing strategic review of these assets by BHP. A high-level materiality assessment has been conducted to confirm that energy consumption and operational GHG emissions from these operations are immaterial to BHP's totals (<0.01%).

References

- GHG Protocol: A Corporate Accounting and Reporting Standard; ghgprotocol.org/corporate-standard
- GHG Protocol Scope 2 Guidance: An amendment to the GHG Protocol Corporate Standard; ghgprotocol.org/scope-2-guidance
- Australia's National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 (as amended in July 2023); cer.gov.au/schemes/national-greenhouse-and-energy-reporting-scheme/report-emissions-and-energy/amendments-to-national-greenhouse-and-energy-reporting-legislation

Calculation methodology

Two reporting methods are used for these calculations as recommended by the Scope 2 Guidance – the market-based method and the location-based method. Definitions of location- and market-based reporting used in our accounting is consistent with the GHG Protocol terminology as follows:

- **Market-based reporting**: Scope 2 emissions based on the generator(s) supplying the electricity (and therefore the generation fuel mix from which the reporter contractually purchases electricity and/or is directly provided electricity via a direct line transfer)
- **Location-based reporting**: Scope 2 emissions based on average energy generation emission factors for defined geographic locations, including local, subnational, or national boundaries (i.e. grid factors). In the case of a direct line transfer, the location-based GHG emissions are equivalent to the market-based GHG emissions

For market-based reporting, electricity emission factors are sourced directly from the supplier where available, as evidenced by RECs and/or supplier-provided documentation in line with the Scope 2 Guidance, unless otherwise specified.

Where supplier-specific factors are not available, a default location-based emission factor for electricity is used instead, as published in local regulations or industry frameworks.

A residual mix emission factor (RMF) that meets the Scope 2 Guidance definition is currently unavailable in the markets where we operate to account for grid electricity GHG emissions remaining after removal of quantities directly contracted between parties. This may result in double counting of renewable or other lower GHG emission electricity contributions across grid-supplied consumers. We are reviewing availability of RMFs in the markets we operate.

For operations in Chile, final validation for surrender of the rights to claim renewable energy attributes occurs on a calendar year basis, while we report on a financial year basis. We will review our reported Scope 2 emissions at the close of the calendar year and restate in the next BHP Annual Report if any variation is found with the Chilean RECs.

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Scopes 1 and 2 emissions: Non-operational control

Description

GHG emissions released directly (Scope 1 emissions) and associated with the third-party generation of electricity consumed (Scope 2 emissions) at operations in which we own an interest but does not have operational control.

Non-operated assets (or interests) refers to assets that are owned as a joint venture but not operated by us. References in this document to a joint venture are used for convenience to collectively describe assets that are not wholly owned by us. Such references are not intended to characterise the legal relationship between the owners of the asset.

Calculation boundary

Our equity share and/or financial control boundary GHG emission inventories include several operations or projects that are not under our operational control, as described in the table opposite.

For a description of our approach, refer to ‘Organisational boundaries’ on page 5.

Exclusions

Some relevant non-operated interests may not have been identified due to our lack of access to underlying information.

References

- GHG Protocol: A Corporate Accounting and Reporting Standard; ghgprotocol.org/corporate-standard
- Solgold Annual Report 2023; solgold.com.au/investors/#financialReports

Calculation methodology

For non-operated assets (or interests), we have worked with the relevant operators of each asset to obtain operational GHG emissions data for the FY2024 reporting year where possible. In cases where the most recent available information was based on a different reporting period (e.g. calendar year), we have used the data provided to estimate FY2024 emissions based on a review of operational conditions and activities across the reporting periods, as shown in the table on the right.

The non-operated assets/interests GHG emissions dataset was also used to calculate Scope 3 emissions based on an equity boundary (investments source), as outlined in Scope 3, Category 15 Investments.

The non-operated assets and the data sources used for each are shown in the table below. While we have endeavoured to include all our investments with associated GHG emissions, some relevant non-operated interests may not have been identified due to our lack of access to underlying information. Refer to previous years’ versions of this methodology document for GHG emission data sources relevant to historical years (and divestments).

Data sources for our non-operated assets

Assets	Scopes 1 and 2 emissions data sources
Tamakaya Energía SpA – Kelar Power Plant	Provided by the operator for FY2024, noting that data remains subject to finalisation for the reporting year and includes: − GHG emissions associated with Kelar Power Plant generation that was sold to the grid − GHG emissions associated with spot power purchases under Scope 2 emissions
Antamina	Provided by the operator for FY2024, noting that data remains subject to finalisation for the reporting year.
Samarco	Production recommenced in January 2021. Provided by the operator for CY2023 and assumed to continue at the same level for the full FY2024 reporting year.
Solgold Plc	Exploration phase; no production. Based on FY2023 GHG emission levels from the Annual Report published by the operator and assumed to continue at same level for the full FY2024 reporting year.

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Carbon offsetting, energy intensity and GHG emission intensity

Carbon offsetting

We are committed to transparently disclosing any carbon credits we use towards meeting our own GHG emissions targets and goals.

In FY2021, we made the decision to retire a quantity of high-quality carbon credits, equivalent to the net increase in our total Scopes 1 and 2 emissions from FY2020 to FY2021. This was not accounted for as progress against our operational GHG emissions medium-term target or long-term net zero goal.

We did not retire any carbon credits in FY2022, FY2023 or FY2024.

Our individual operated assets may also be subject to regulated GHG emission thresholds and regional carbon pricing (including GHG emission trading schemes or emissions-limiting regulations). In cases where our direct GHG emission reductions are not able to meet the requirements specified for these regulatory programs or schemes, we may purchase and retire eligible carbon credits to meet our compliance obligations. We will not use regulatory carbon credits to meet our operational GHG emissions medium-term target.

Information on how we may use carbon credits to meet our GHG emissions targets and goals is included on pages 35 to 42.

Energy intensity and GHG emission intensity

Our energy and GHG emissions intensity with respect to our commodity production is presented on a copper equivalent production basis. The conversion of production data to copper equivalent production is applied so that we can present an intensity metric that can include the range of commodities produced by the business.

Copper equivalent production has been calculated based on FY2024 averaged realised product prices for all years included in FY2024 reporting, to allow for comparison between years.

Production figures used are consistent with energy and GHG emissions reporting boundaries and are taken on a 100 per cent basis where we have operational control.

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Value chain GHG emissions
(Scope 3 emissions)

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Scope 3 emissions

Categories

The Scope 3 Standard divides Scope 3 emissions into upstream and downstream GHG emissions, based on the financial transactions of the reporting company:

- Upstream GHG emissions are indirect GHG emissions related to purchased or acquired goods and services
- Downstream GHG emissions are indirect GHG emissions related to sold goods and services

The Scope 3 Standard further categorises Scope 3 emissions into 15 distinct categories. Where relevant to our organisation, we report Scope 3 emissions for our business according to these categories. Where it enhances relevance and transparency – or where particular GHG emission sources are deemed critical by key stakeholders or contribute to our risk exposure – we further disaggregate this data.

Category inclusions

- Category 1: Purchased goods and services (including capital goods)
- Category 3: Fuel- and energy-related activities
- Category 4: Upstream transportation and distribution
- Category 6: Business travel
- Category 7: Employee commuting
- Category 9: Downstream transportation and distribution
- Category 10: Processing of sold products
- Category 11: Use of sold products
- Category 15: Investments

Category exclusions

- Category 2: Capital goods: As described in the Scope 3 Guidance, depending on a company's internal procurement processes, purchases of capital goods can be difficult to segregate from the 'Purchased goods and services' category (Category 1). Given our spend data (which includes purchases of capital goods) has been captured in the calculation methodology for Category 1, GHG emissions related to purchases of capital goods are not reported separately here. Instead, for our value chain, the GHG emissions reported under Category 1 include GHG emissions associated with purchases of capital goods
- Category 5: Waste generated in operations: This category has been identified as not material to our reported Scope 3 inventory for our business and a GHG emissions figure is not calculated. Spend associated with waste related utility services would be captured as part of reporting for Category 1. This assessment will be periodically reviewed
- Category 8: Upstream leased assets: A GHG emissions figure is not calculated for this category as, under our selection of the operational control approach to boundaries, GHG emissions from any upstream leased assets we control are included in our Scope 1 emissions inventory. This assessment will be periodically reviewed
- Category 12: End-of-life treatment of sold products: This category has been identified as not material to the Scope 3 inventory for our business and a GHG emissions figure is not calculated. Our products that are not incorporated into the assessment of Scope 3 emissions in Category 11 include metals and minerals with minimal emissions at end of life. This assessment will be periodically reviewed
- Category 13: Downstream leased assets: A GHG emissions figure is not calculated for this category as we do not lease downstream assets in the course of normal operations. This assessment will be periodically reviewed
- Category 14: Franchises: A GHG emissions figure is not calculated for this category as we do not have franchised operations

Boundary overlap

The GHG emission categories defined by the Scope 3 Standard are designed to be mutually exclusive so such that for a given company, there is no double counting of GHG emissions between categories. However, for us (in common with other producers of raw materials), there is a degree of overlap in reporting boundaries due to our involvement at multiple points in the life cycle of the commodities we produce and consume. As a result, some double counting may be inherent due to our position in the value chain and may inflate our reported total Scope 3 emissions. The potential for double counting is likely to have been substantially reduced following the divestment of our Petroleum business in FY2022.

Some double counting of GHG emissions in our current reported Scope 3 emissions inventory is an expected outcome of GHG emissions reporting between the different Scopes and is not considered to detract from the overall value of our Scope 3 emissions disclosures.

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Scope 3 emissions continued

Comparing progress

Comparing progress in Scope 3 emissions reductions between years should consider the role that divestments played in the reduction of GHG emissions.

To assess progress across multiple years on a consistent basis, adjusted for material acquisitions, divestments and methodology changes, refer to our GHG emissions targets and goals tables on pages 35 to 42.

Refer to ‘All GHG emissions data’ in the ‘Changes from FY2023’ on page 6 for how our acquisition of OZ Minerals on 2 May 2023 is reflected in our reported GHG emissions inventories. This applies to Scope 3 emissions except that former OZ Minerals Australia operations data has not been included in certain Scope 3 emissions categories and/or sub-categories for both the re-calculated FY2023 data and for FY2024 reported Scope 3 inventories due to data limitations. We estimate these GHG emissions to be immaterial.

Use of diagrams

Diagrams in ‘Calculation methodology’ on the pages that follow in this ‘Value chain GHG emissions’ section are provided to support understanding of BHP’s calculations and are not intended to indicate any difference or deviation from the approach required by the applicable methodology(ies) for the category.

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Category 1: Purchased goods and services (including capital goods)

Scope 3 Standard category description

Upstream (i.e. cradle-to-gate) GHG emissions from the extraction, production and transportation of goods and services purchased or acquired by the reporting company in the reporting year, where not otherwise included in Categories 2 to 8.

Calculation status rationale

This is not a materially large source of Scope 3 emissions for us on a whole-of-Group quantitative basis. However, Scope 3 emissions from this category are considered a material part of our non-ferrous metals (copper and nickel) value chains. In addition, we have a Scope 3 long-term net zero target for our direct suppliers that covers some of the GHG emissions in this category. We therefore consider this category material and relevant as the GHG emissions in this category may contribute to the exposure of our business to climate-related risk. Our spend data includes purchases of capital goods and so our Category 1 calculation methodology includes capital goods and Category 2: Capital goods is not separately reported.

Exclusions

None

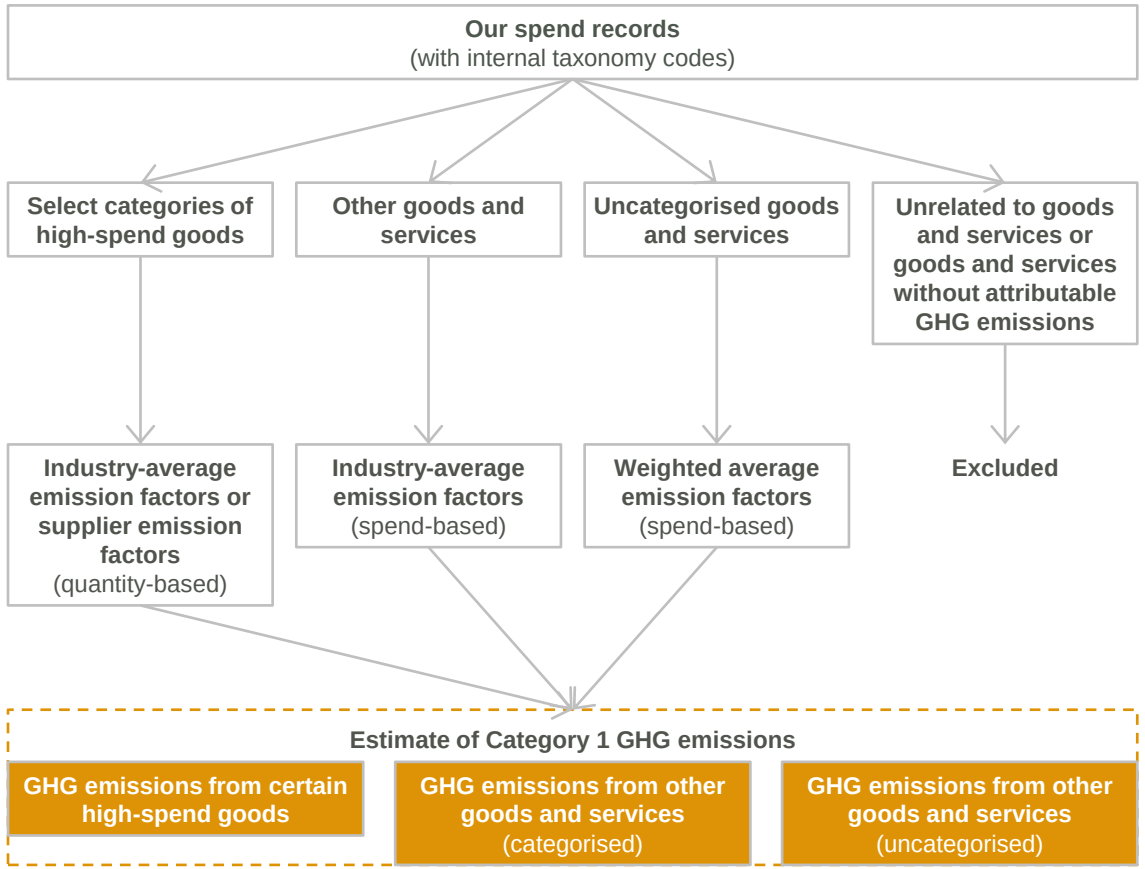
References

- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (v1): Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2
- US Bureau of Labor Statistics; bls.gov/cpi/data.htm

Notes

- For us, this category includes GHG emissions associated with purchases of capital goods, which are classified as a separate category (Category 2) under the Scope 3 Standard. As described in the Scope 3 Guidance, purchases of capital goods can be difficult to segregate from this category. The transport of goods and services to us may also be included in this category when we do not have a reliable way to estimate it separately
- Select categories of high-spend goods include explosives, grinding media, conveyor belts, tyres, and select bulk materials. We have also estimated the GHG emissions associated with the transport of those goods to us, reported under Scope 3 Category 4

Calculation methodology



Category 1: Purchased goods and services (including capital goods) continued

Notes continued

- For the high-spend goods select categories (quantity-based), industry-average emission factors are sourced from Life-Cycle Analysis (LCA) databases (EconInvent and AusLCI) or supplier emission factors are sourced from supplier-specific LCA reports. Annual invoice data for specific vendors and specific material categories is used for this calculation
- For other goods and services (spend-based), industry-average emission factors are sourced from the GHG Protocol Quantis Scope 3 Evaluator tool (Quantis tool) and adjusted for inflation for the reporting year using consumer price index data from the US Bureau of Labor Statistics. The applicable adjusted-for-inflation emission factor for a Quantis tool product group category is applied to the spend data allocated to that category. A weighted average emission factor is applied for any spend on goods and services that remain uncategorised
- Currently, GHG emissions for former OZ Minerals operations have only been calculated using the spend-based method

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Category 3: Fuel- and energy-related activities

Scope 3 Standard category description

GHG emissions related to the extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in Scopes 1 or 2 emissions.

Calculation status rationale

This is not a materially large source of Scope 3 emissions for us on a whole-of-Group quantitative basis. However, we have a Scope 3 long-term net zero target for our direct suppliers that covers some of the emissions in this category. We therefore consider this category material. Additionally, consumption of fuels and energy represent a material contribution to our Scopes 1 and 2 operating emissions; the associated Scope 3 emissions are therefore relevant.

Exclusions

Upstream GHG emissions from a small quantity of energy consumed that is reported internally under a mixed other category (representing less than 2 per cent of total energy consumed) are excluded.

This is due to the difficulty in assigning a meaningful Scope 3 emission factor to the variety of energy sources involved (including coal seam gas, hydrogen, LPG, steam and heat).

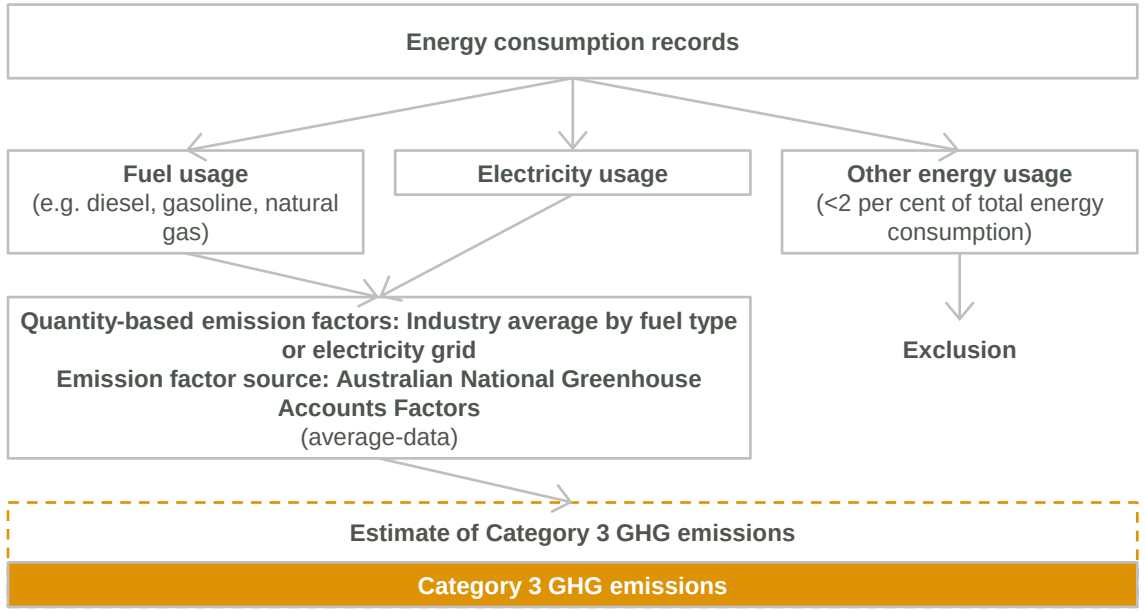
References

- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (v1): Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2
- National Greenhouse Accounts Factors 2023 (Tables 1 to 8); Australian Government Department of Climate Change, Energy, Environment and Water; 2023; dcceew.gov.au/sites/default/files/documents/national-greenhouse-account-factors-2023.pdf

Notes

- This category covers GHG emissions arising from the extraction, production, and transportation of fuels and energy consumed by the facilities over which BHP has operational control, primarily: (i) upstream GHG emissions from the extraction, production, and transportation of fuels (e.g. diesel for haul trucks or natural gas for onsite power generation) we purchase for use at our operations, and (ii) upstream GHG emissions from the extraction, production and transportation of fuel (e.g. coal or natural gas) burned to generate the electricity we purchase from the grid
- GHG emissions from the combustion of fuels at our facilities are accounted for as our Scope 1 emissions; similarly, GHG emissions from the generation of purchased electricity consumed by us-are accounted for as our Scope 2 emissions
- For our Australian operations, Scope 3 emission factors are sourced from the most recent Australian National Greenhouse Accounts Factors published by the Australian Government Department of Climate Change, Energy, the Environment and Water available at the time of the calculations
- For our non-Australian operations, regional Scope 3 emission factors for fuels and energy are not readily available at this stage, so the relevant Australian Scope 3 emission factors are applied as a proxy

Calculation methodology



Category 4: Upstream transportation and distribution

Scope 3 Standard category description

GHG emissions from the transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company); transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g. of sold products); and transportation and distribution between a company's own facilities (in vehicles and facilities not owned or controlled by the reporting company).

Calculation status rationale

This is not a materially large source of Scope 3 emissions for us on a whole-of-Group quantitative basis. However, GHG emissions associated with the freight of our products to customers are of increasing interest as a component of our value chain and may contribute to the exposure of our business to climate-related risk. We also have a medium-term goal and long-term net zero target for the maritime portion of this category of Scope 3 emissions. Therefore, we consider this category material and relevant.

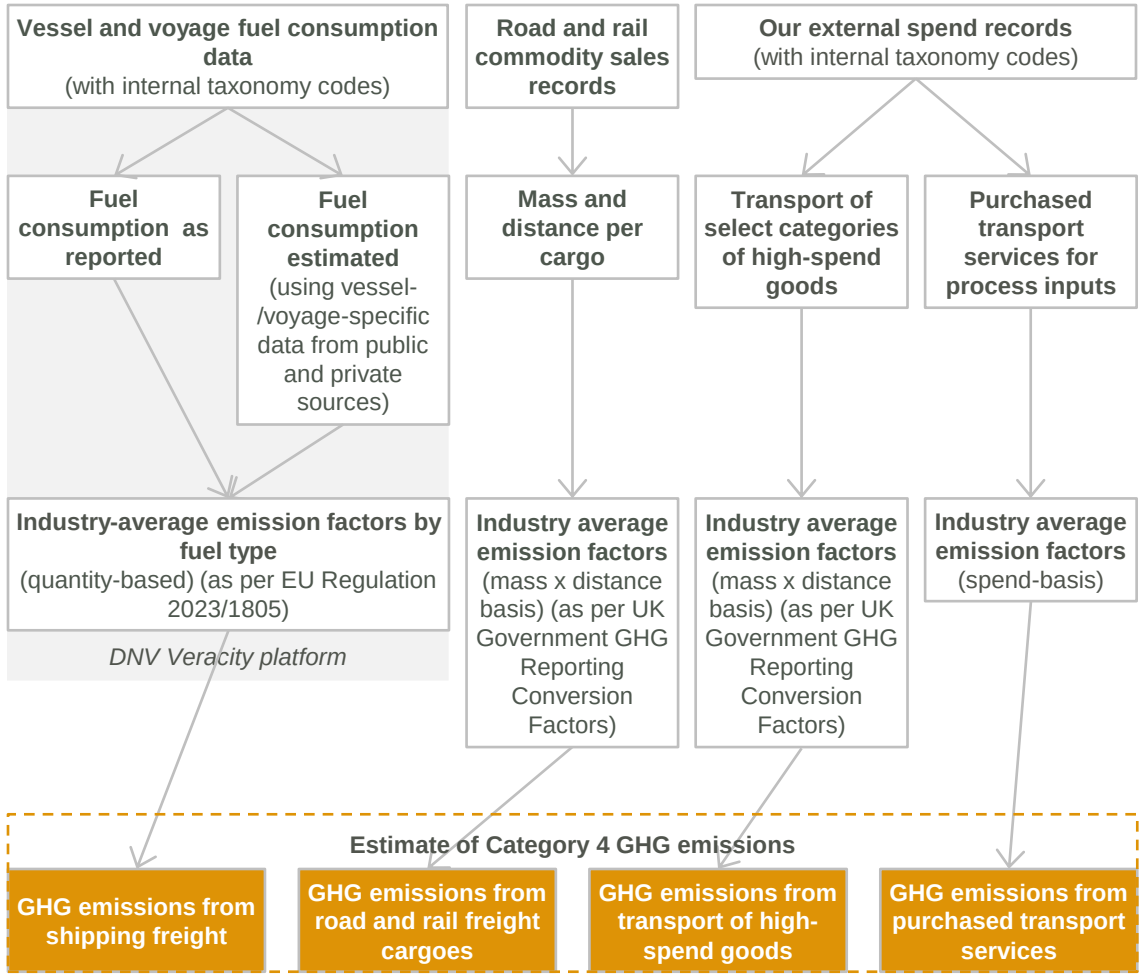
Exclusions

GHG emissions from the transport of process inputs to BHP's operations where spend data is not available (i.e. transport costs are incorporated into the supplier price). These emissions are likely to be captured under the 'Purchased goods and services (including capital goods)' category (Category 1).

References

- Veracity; DNV; 2024; dnv.com/data-platform/index
- DCS verification; DNV; 2024; dnv.com/maritime/insights/topics/dcs/index
- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions v1.0 – Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2
- EU Regulation 2023/1805; European Union; 2023; data.europa.eu/eli/reg/2023/1805/oj
- GHG Emissions Reporting: Conversion Factors 2024 (Freighting goods); UK Government Department for Energy Security and Net Zero; July 2024; gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2024
- Google Maps; google.com/maps
- US Bureau of Labor Statistics bls.gov/cpi/data.htm

Calculation methodology



Category 4: Upstream transportation and distribution continued

Notes

- As the Scope 3 Standard categorises Scope 3 emissions as upstream or downstream on the basis of financial transactions, this category includes GHG emissions from the transport of our products where freight costs are covered by BHP (e.g. under Cost and Freight (CFR) or similar terms), as well as purchased transport services for process inputs to our operations
- This category includes GHG emissions from road, rail and marine freight, where the latter makes up the majority of emissions
- Product transport data is sourced from BHP's internal system for each commodity. For each individual product cargo, data includes loading and destination locations and cargo weight
- For all marine freight cargoes, DNV's Veracity – a data platform used to collate, validate and report vessel GHG emissions under regulatory and voluntary schemes – was used to develop a Scope 3 emission estimate based on its accredited verification methodology. If fuel consumption values are unavailable, incomplete or appear anomalous, we may need to apply assumptions to estimate fuel consumption based on a range of publicly or privately available data sources. We may also need to apply assumptions to appropriately account for our share of GHG emissions associated with the 'unused' carrying capacity of partially loaded container ships
- For road and rail freight GHG emission calculations, online tools (driving distance based on Google Maps google.com/maps) or published data on rail operator websites are used to estimate the distance covered
- For select categories of high-spend goods, emissions for transport of goods to our operations are estimated for each product based on the distance travelled via sea and road (using Google Maps and Sea Distance Calculator). We are not always aware of the precise discharge port(s) for these cargoes and use reasonable assumptions (for example, an assumption regarding the most likely discharge port) where required to estimate distance travelled
- For GHG emissions from purchased transport services for process inputs to our operations, the spend-based method is used, as described in the calculation methodology for the 'Purchased goods and services (including capital goods)' category (Category 1) on pages 18 and 19

BHP

Category 6: Business travel

Scope 3 Standard category description

GHG emissions from the transportation of employees for business-related activities during the reporting year (in vehicles not owned or operated by the reporting company).

Calculation status rationale

This is not a materially large source of Scope 3 emissions for us on a whole-of-Group quantitative basis. However, we have a Scope 3 long-term net zero target for our direct suppliers that covers some of the emissions in this category. We therefore consider this category material and a high-level estimate has been calculated for transparency.

Exclusions

GHG emissions from business travel activities for which distance or spend data is not available.

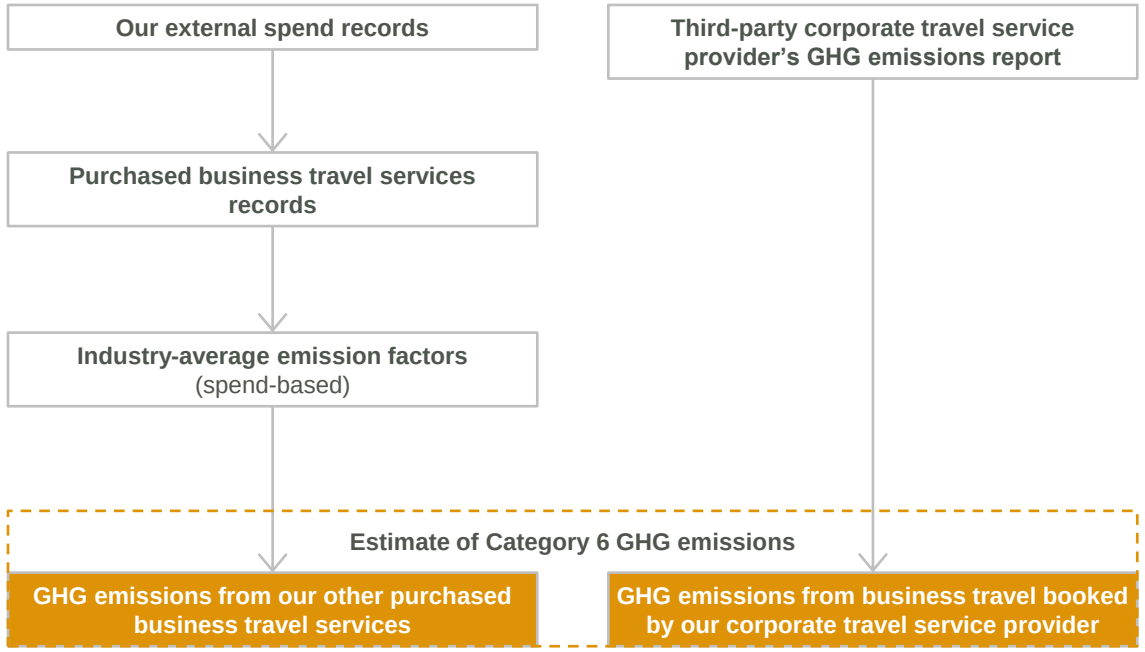
References

GHG Protocol Technical Guidance for Calculating Scope 3 Emissions v1.0 – Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2

Notes

- This category covers GHG emissions from domestic and international flights undertaken by employees for business travel purposes, as well as other purchased business travel services (e.g. car hire) identified from annual spend data. GHG emissions from the combustion of fuels at our facilities are accounted for as our Scope 1 emissions; similarly, GHG emissions from the generation of purchased electricity consumed by us are accounted for as our Scope 2 emissions
- GHG emissions from flights undertaken by employees for business travel are sourced directly from our third-party corporate travel service provider's FY2024 emissions report. The calculation methodology applied in the report (as stated by the provider) aligns with the latest UK Department for Environment, Food and Rural Affairs (DEFRA) standards for air travel. DEFRA standards consider the distances travelled for domestic, short and long-haul flights in each class of travel (ranging from economy to first class). Calculations include radiative forcing (RF), a measure of the additional environmental impact of aviation, including impacts from emissions of nitrous oxide and water vapour at high altitudes. Scope 3 emissions, including RF, are determined by multiplying the distance (km) travelled by the appropriate emission factor
- For other purchased business travel services, the spend-based method is used to calculate associated emissions, as described in the calculation methodology for the 'Purchased goods and services (including capital goods)' category (Category 1) on pages 18 and 19.

Calculation methodology



Category 7: Employee commuting

Scope 3 Standard category description

GHG emissions from transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company).

Calculation status rationale

This is not a materially large source of Scope 3 emissions for us on a whole-of-Group quantitative basis. However, we have a Scope 3 long-term net zero target for our direct suppliers that covers some of the emissions in this category. We therefore consider this category material and a high-level estimate has been calculated for transparency.

Exclusions

GHG emissions from employee commuting activities for which spend data is not available.

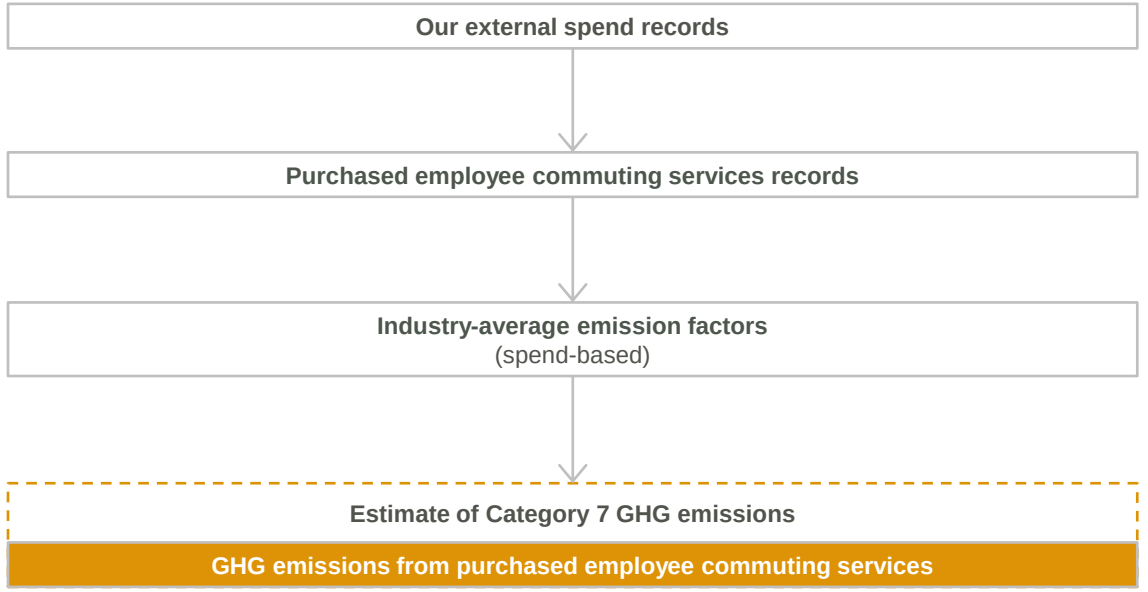
References

GHG Protocol Technical Guidance for Calculating Scope 3 Emissions v1.0 – Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2

Notes

- This category covers GHG emissions from chartered fly-in fly-out (FIFO) flights and ground transport services (e.g. bus and car fleet services) utilised by employees for commuting purposes
- The spend-based method is used to calculate these emissions, as described in the calculation methodology for the 'Purchased goods and services (including capital goods)' category (Category 1) on pages 18 and 19
- Charter flight and ground transport spend data is extracted from the BHP internal system that tracks external spend

Calculation methodology



Category 9: Downstream transportation and distribution

Scope 3 Standard category description

GHG emissions from transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company).

Calculation status rationale

This is not a materially large source of Scope 3 emissions for us on a whole-of-Group quantitative basis. However, GHG emissions associated with the freight of our products to customers are of increasing interest as a component of our value chain and may contribute to the exposure of our business to climate-related risk. We also have a medium-term goal and long-term net zero target for the maritime portion of this category of Scope 3 emissions. Therefore, we consider this category material and relevant.

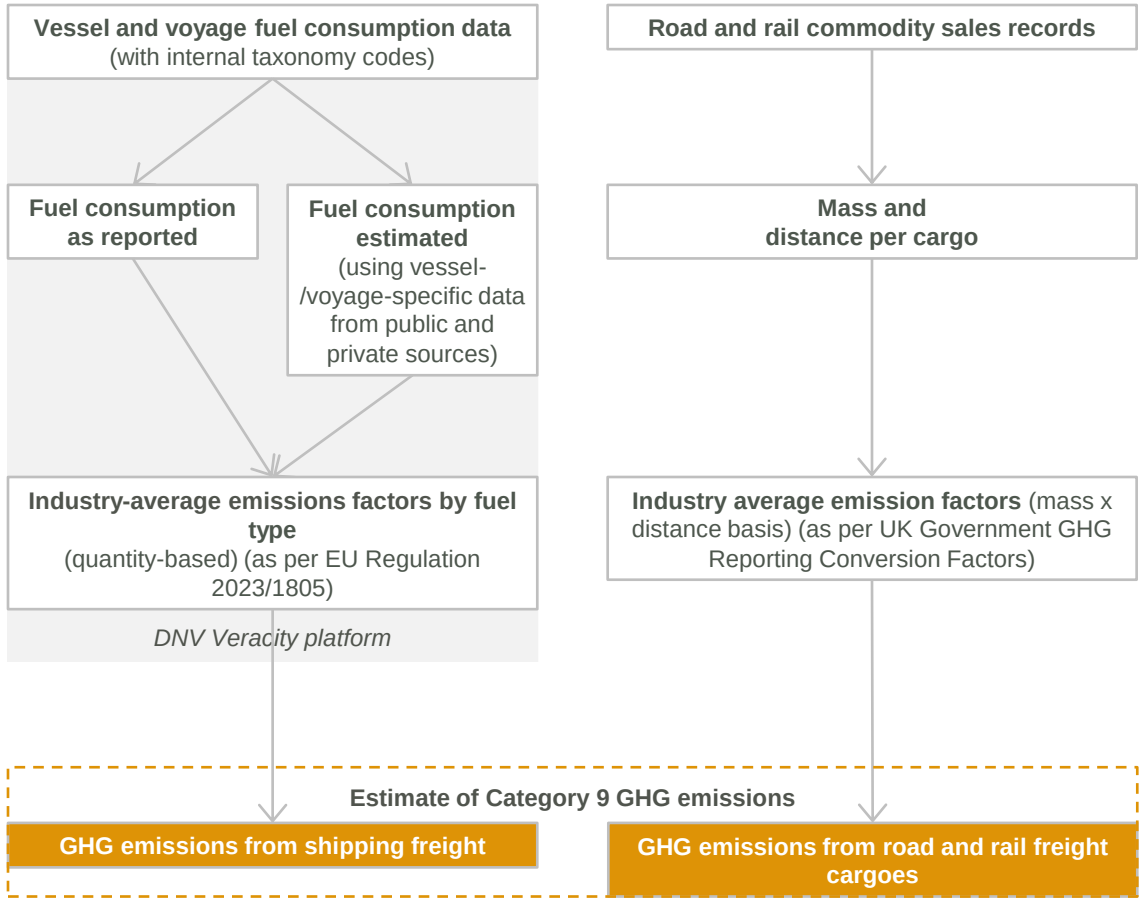
Exclusions

None

References

- Veracity; DNV; 2024; dnv.com/data-platform/index
- DCS verification; DNV; 2024; dnv.com/maritime/insights/topics/dcs/index
- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions v1.0 – Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2
- EU Regulation 2023/1805; European Union; 2023; data.europa.eu/eli/reg/2023/1805/oj
- GHG Emissions Reporting: Conversion Factors 2024 (Freighting goods); UK Government Department for Energy Security and Net Zero; July 2024; gov.uk/government/publications/greenhouse-gas-reporting-conversion-factors-2024
- Google Maps; google.com/maps

Calculation methodology



Category 9: Downstream transportation and distribution continued

Notes

- As the Scope 3 Standard categorises Scope 3 emissions as upstream or downstream on the basis of financial transactions, this category includes GHG emissions from the transportation and distribution of our products where freight costs are not covered by BHP (e.g. under Free on Board (FOB), Ex Works (EXW) or similar terms)
- This category includes GHG emissions from road, rail and marine freight, where the latter makes up the majority of emissions
- For some FOB cargoes, destination ports are not known and DNV's Veracity uses AIS (i.e. publicly reported geolocational tracking data) to derive the first destination port within the intended destination country
- All other methodology details are as described in the 'Upstream transportation and distribution' category (Category 4) on pages 21 and 22

BHP

Category 10: Processing of sold products

Scope 3 Standard category description

GHG emissions from the processing of intermediate products sold in the reporting year by downstream companies (e.g. manufacturers) subsequent to sale by the reporting company.

Calculation status rationale

Along with the 'Use of sold products' category (Category 11), this is a material source of Scope 3 emissions in our value chain.

Exclusions

In addition to iron ore, metallurgical coal, copper and nickel, we also produce zinc, molybdenum, gold, silver, cobalt, and uranium oxide, which are in some cases processed to meet a range of purposes. The variety of end uses associated with these products means applying a meaningful average emission factor is challenging. In addition, the production volumes for these commodities (and their associated emissions) are not significant compared to those for iron ore, metallurgical coal, copper and nickel. As a result, GHG emissions from the downstream processing of these products have been excluded at this stage. This exclusion will be periodically reviewed.

References

- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions v1.0 – Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2
- BHP Operational Review for the year ended 30 June 2024; BHP; 2024; bhp.com/investors/financial-results-operational-reviews
- Product-specific references as listed on the next five pages

Calculation methodology

The 'average-data' method as described in the Scope 3 Guidance is used to calculate these GHG emissions, with industry-average emission factors applied to production volumes (on an equity basis) for each commodity to calculate an overall emissions estimate for this category.

We produce a number of products that undergo third-party processing (by our customers) resulting in GHG emissions, the most significant of which are:

- iron ore, which is assumed (for the purposes of estimated downstream Scope 3 emissions) to be processed into steel. This is recognised as being an emissions-intensive process that is technologically difficult to decarbonise
- steelmaking coal, which is assumed to be used in the processing of iron ore to steel as a reductant in the chemical reactions, an internal structural component and as an energy source
- copper, which we split into two product segments for the purposes of estimated downstream Scope 3 emissions: (1) copper concentrates that are processed into cathodes by third parties; and (2) our own semi-fabricated products
- nickel, which we split into four product segments based on sales data, for the purposes of estimated downstream Scope 3 emissions: (1) our nickel intermediates that go to third-party refiners; (2) nickel metal that goes into stainless steel and alloys production; (3) nickel metal that goes into nickel sulphate (NiSO4) for battery value chains; and (4) BHP's NiSO4 that goes directly into battery precursor material production

Overlap in calculation boundaries

We have endeavoured to develop our GHG emission calculation methodologies for copper and nickel to a level of granularity that allows us to remove the double counting of our Scopes 1 and 2 emissions. However, our Scope 3 emission reporting necessarily requires a degree of overlap in reporting boundaries due to our involvement at multiple points in the life cycle of the commodities we produce and consume.

BHP

Category 10: Processing of sold products – steelmaking (iron ore and steelmaking coal processing)

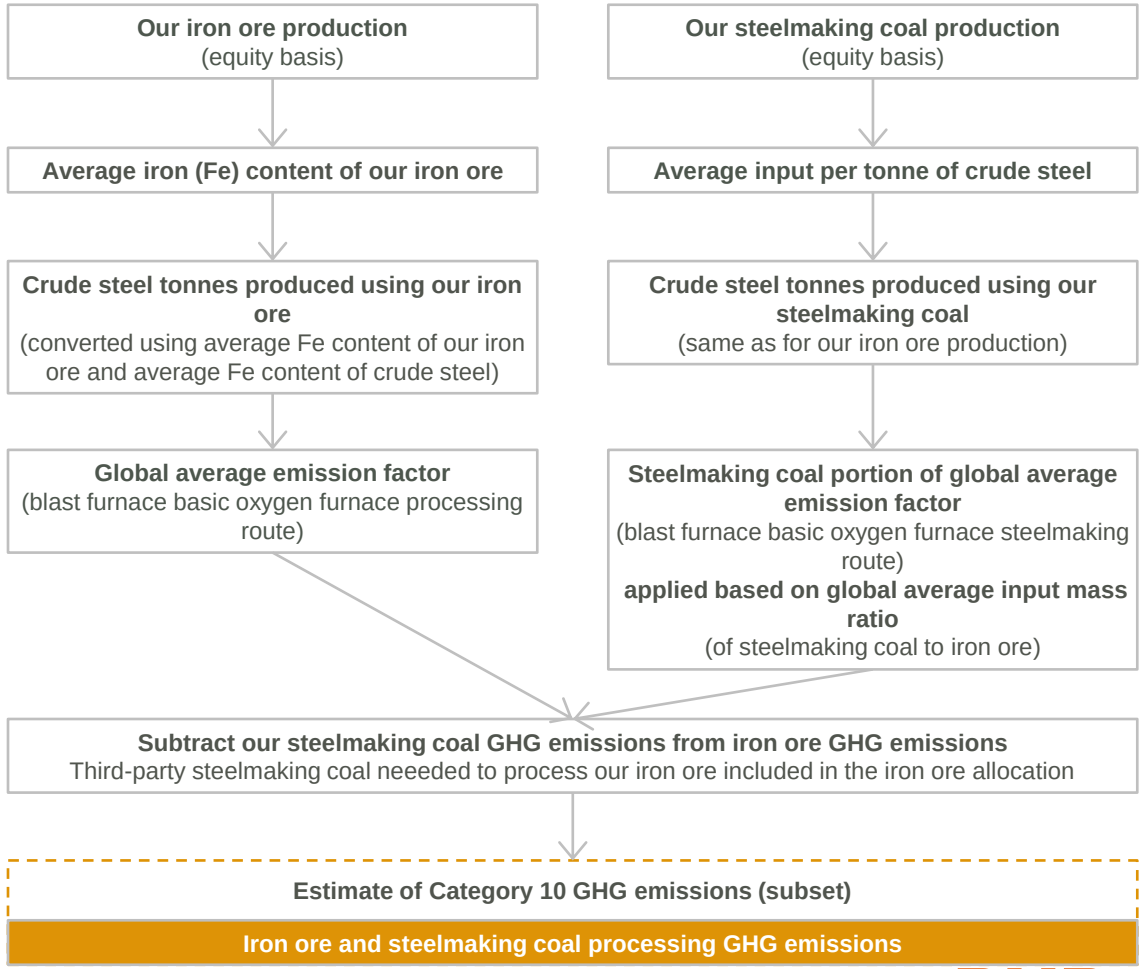
Notes

- GHG emissions relating to steelmaking from processing BHP raw materials are estimated using the global average emissions intensity factor of tonnes CO_2 per tonne of crude steel for the blast furnace basic oxygen furnace process route sourced from the International Energy Agency (IEA)
- The GHG emission factor is applied to an equivalent crude steel production volume related to the processing of BHP's iron ore and steelmaking coal portfolio in crude steelmaking. The crude steel equivalent production volume is calculated based on FY2024 iron ore equity production and the average percentage iron (Fe) content in our products, converted to equivalent crude steel quantity using the average Fe content of crude steel from the IEA Iron and Steel CCS Study (April 2013)
- The majority of BHP's steelmaking raw materials portfolio (iron ore and steelmaking coal) is sold into and processed through the blast furnace integrated steelmaking route. To resolve the double counting between the iron ore and steelmaking coal inputs into the steelmaking process, BHP estimates the total steelmaking emissions in the processing of our iron ore quantities in steelmaking. The contribution of our steelmaking coal production and required third-party steelmaking coal (i.e. as needed to process our iron ore) to total steelmaking emissions is allocated based on the global average mass input into the process sourced from the World Steel Association (WSA)
- Refer to 'Additional information' on pages 43 to 49 for additional details of calculations for this Scope 3 'Processing of sold products' category (subset) for iron ore and steelmaking coal processing, including the mass balance applied and how third-party steelmaking coal calculations are performed for inclusion in the iron ore allocation (not shown in the diagram opposite)

Key assumptions

- To estimate GHG emissions from the processing of iron ore, all iron (Fe) content in produced iron ore is assumed to be processed to crude steel via the blast furnace basic oxygen furnace route. The crude steel equivalent produced is assumed to be attributable to iron ore only and not scrap steel
- The total GHG emissions from steelmaking are apportioned between the iron ore and BHP's steelmaking coal inputs by applying the average ratio of each input required to produce 1,000 kg of crude steel using the WSA's data on the integrated furnace blast furnace basic oxygen furnace route to the crude steel emission factor. The steelmaking coal portion of the emission factor is applied to emissions from the crude steel equivalent volume produced from BHP's steelmaking coal production. Emissions from third-party steelmaking coal necessary to process BHP's iron ore quantities not covered by our steelmaking coal are included in the emissions allocated to iron ore

Calculation methodology



Category 10: Processing of sold products – steelmaking (iron ore and steelmaking coal processing) continued

Data sources

- Production volumes are sourced from the BHP Operational Review for the year, with calculations performed on an equity basis
- An industry average emission factor for the blast furnace basic oxygen furnace is sourced from the IEA Iron and Steel Technology Roadmap (Oct 2020). As a result, the emission factor may not accurately represent (geographically, technologically or temporally) the actual emissions intensities of our customers' facilities. However, it is considered to be sufficiently representative of average industry conditions as to provide a meaningful estimation
- The quantity of crude steel equivalent produced from the input quantity of iron ore is calculated using a conversion factor based on the average iron (Fe) content of BHP iron ore product and the average Fe content of crude steel from IEA Iron and Steel CCS Study (April 2013)
- The global average input mass ratio of steelmaking coal versus iron ore to the blast furnace basic oxygen furnace steelmaking route is sourced from the Worldsteel publication – Fact sheet Steel and raw materials, 2019

References

- Fact sheet Steel and raw materials; World Steel Association; 2019; worldsteel.org/
- Iron and Steel CCS Study; IEA; 2013; ieaghg.org/publications/iron-and-steel-ccs-study-(techno-economics-integrated-steel-mill)/
- Iron and Steel Technology Roadmap (pg. 43) ; IEA; 2020; iea.org/reports/iron-and-steel-technology-roadmap

BHP

Category 10: Processing of sold products – copper

Notes

- To estimate GHG emissions from the processing of both copper concentrates and copper cathodes, we apply industry-wide average emission factors to the production volumes of the respective products. These are sourced from recent studies conducted by the International Copper Association (ICA) and the Copper Council
- Production volumes are allocated to each product segment based on internal sales information. There is a small differential between production volumes and sales volumes resulting from inventory movements. For more information, refer to the Data sources section below

Key assumptions

- All copper cathode is assumed to be manufactured into semi-fabricated products. As copper semi-fabricated products are generally extruded/ reshaped forms of the feedstock metal, a one-to-one mass conversion factor is assumed
- All copper concentrate is assumed to be processed into copper cathode. For more information, refer to the Data sources section below.

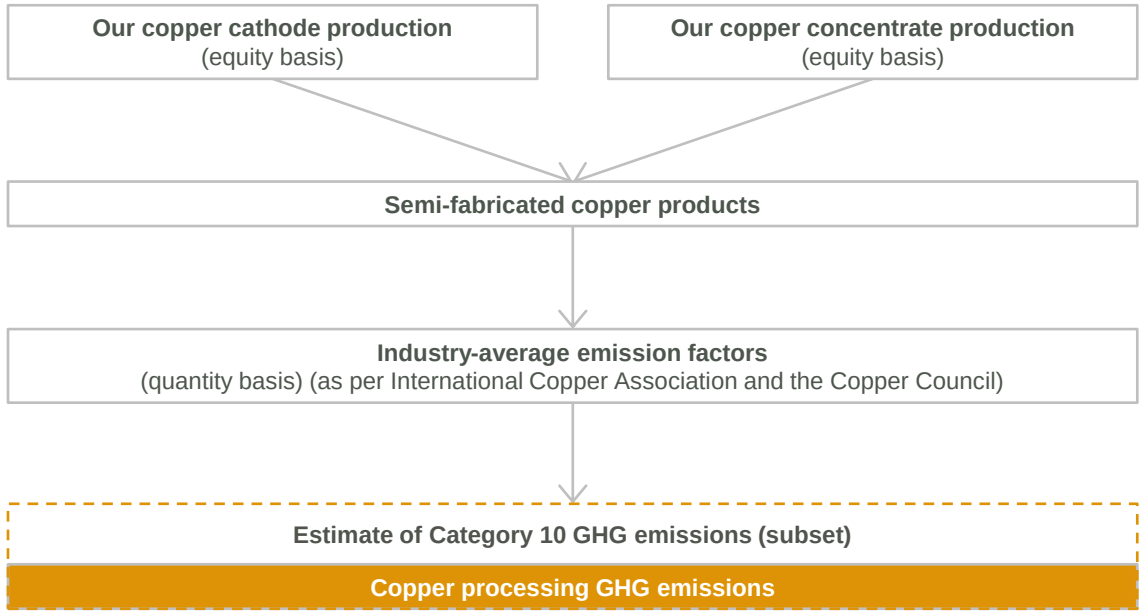
Data sources

- Production volumes are sourced from the BHP Operational Review for the year, with calculations performed on an equity basis
- Concentrate to cathode refining by third parties: An industry average emission factor is sourced from the 2022 ICA Global Copper Decarbonization Roadmap (GCDR) Compendium
- Cathode to semi-fabricated copper products: An indicative industry average emission factor has been developed by dividing the total 2021 global emissions from this activity (as calculated by the ICA) by the total 2021 global production of semi-fabricated copper production (sourced from the Copper Council)

References

Semis Production and Demand; Copper Council; 2021; coppercouncil.org/wp-content/uploads/2021/10/Semis-Production-and-Demand.xlsx

Calculation methodology



Category 10: Processing of sold products – nickel

Notes

- For nickel products, we apply industry average emission factors for each product segment to the production volumes for each segment, sourced from LCA analysis done by the Nickel Institute (2021), or from third party analysis, including CRU and BloombergNEF
- Production volumes are allocated to each product segment based on internal sales information. There is a small differential between production volumes and sales volumes resulting from inventory movements. For more information, refer to the Data sources section below.

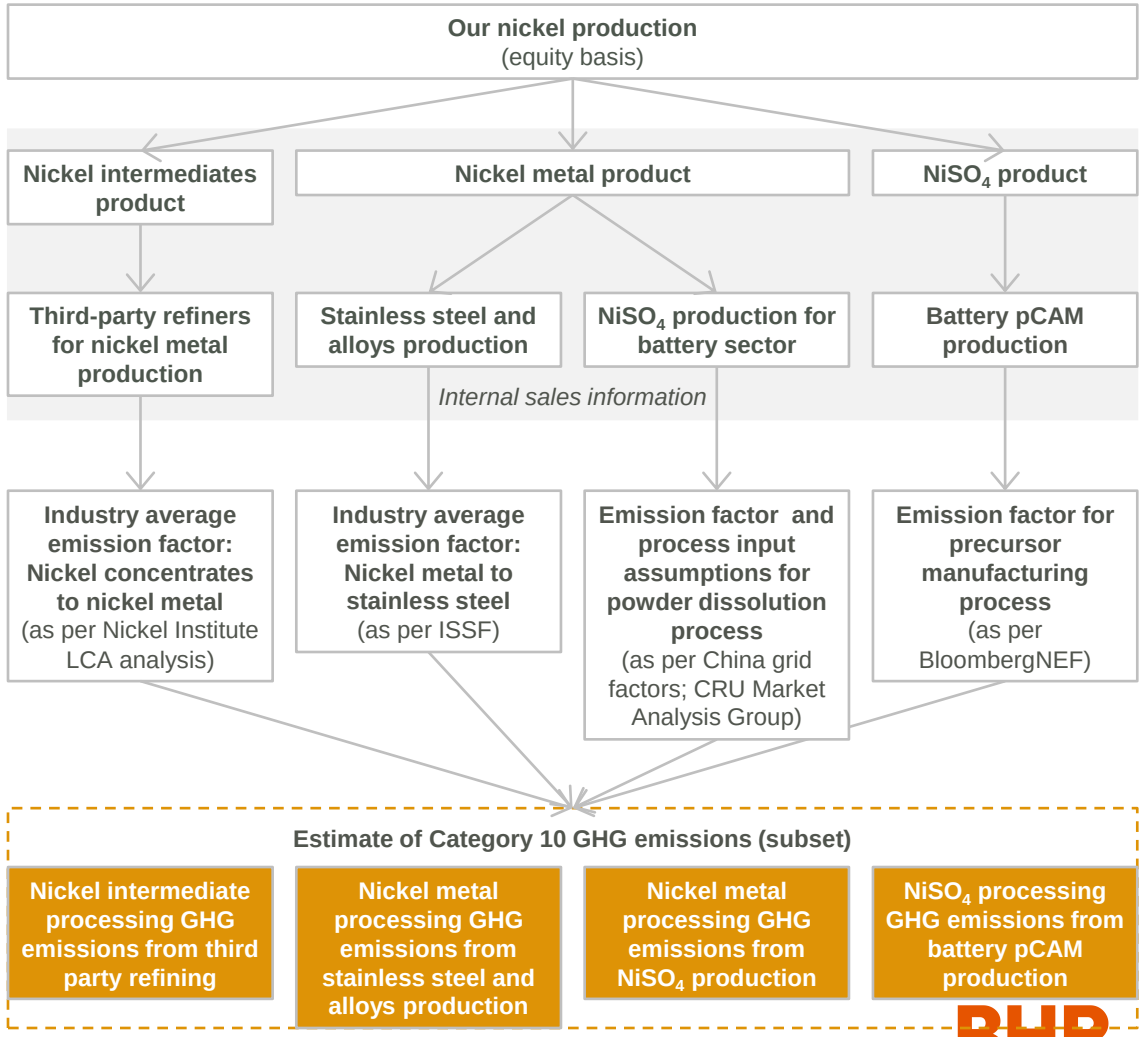
Key assumptions

- For nickel products going into stainless steel production, we assume a nickel content of 8 per cent in series 304 (SAE 304) stainless steel
- For NiSO4 going into precursor cathode active material production (PCAM), we assume the nickel content and manufacturing emissions intensity of the NCM 811 type cathode material used for lithium-ion batteries (nickel:cobalt:manganese at a ratio of 8:1:1)
- For nickel products going into NiSO4 production, we assume a powder dissolution process specific to battery supply chains.

Data sources

- Production volumes are sourced from the BHP Operational Review for the year, with calculations performed on an equity basis
- Nickel intermediates to third party refiners: Assumed the global industry average emission factor of conversion of nickel concentrates to nickel metal sourced from the Nickel Institute's LCA analysis. Only GHG emissions associated with the primary extraction and refining portions of the overall process are used
- Nickel metal going into stainless steel and alloys: International Stainless Steel Federation (ISSF) industry-average emission factor for stainless steel (SS), and average 8 per cent Ni content in series 304 SS sourced from the Nickel Institute. We were not able to source emission factors for conversion to alloys so have generalised those volumes into the stainless steel category
- Nickel metal going into NiSO4 for the battery sector: China grid emissions intensity factors and process inputs assumptions from the CRU Market Analysis Group are used in estimation of GHG emissions from the powder dissolution process. Nickel content of NiSO4 for batteries is based on our FY2024 product assay

Calculation methodology



Category 10: Processing of sold products – nickel continued

Data sources continued

- NiSO4 going directly into battery precursor cathode active material (pCAM): NMC811 precursor manufacturing emissions are sourced from BloombergNEF, with assumed nickel content (mass ratio) of NMC811 precursor active material sourced from IDTechX

References

- Nickel life cycle data; Nickel Institute; 2022; nickelinstitute.org/en/policy/nickel-life-cycle-management/nickel-life-cycle-data/
- Stainless Steel: the Role of Nickel; Nickel Institute; 2022; nickelinstitute.org/en/nickel-applications/stainless-steel/

BHP

Category 11: Use of sold products

Scope 3 Standard category description

GHG emissions from the end use of goods and services sold by the reporting company in the reporting year.

Calculation status rationale

Along with the 'Processing of sold products' category (Category 10), this is a material source of Scope 3 emissions in our value chain. We produce energy coal, which releases GHG emissions when consumed by third party end users. These emissions are estimated for this category.

Exclusions

Steelmaking coal is excluded from this category and included in the Scope 3 'Processing of sold products' category (Category 10) to remove the potential double counting of emissions across the two categories, and to report steelmaking coal together with iron ore, as both commodities serve as inputs into the steelmaking process.

References

- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions v1.0 – Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2
- BHP Operational Review for the year ended 30 June 2024; BHP; 2024; bhp.com/investors/financial-results-operational-reviews
- NGER Measurement Determination 2008 (as amended July 2022) (Schedule 1 Part 1); Australian Government; 2022; legislation.gov.au/F2008L02309/latest/versions

Notes

- We have historically marketed a small portion of BMA products against energy coal indexes. In FY2024, this portion was approximately 1.67 per cent, down from 3.5 per cent in FY2023. For purposes of enhancing the transparency and accuracy of our Scope 3 emission reporting, for FY2024 we have once again estimated the energy coal component of BMA production based on the percentage of BMA product marketed as energy coal and associated GHG emissions under this 'Use of Sold Products' category
- There is a possibility that a small portion of our sold energy coal could be used to generate electricity consumed within BHP's own operations. Therefore, these GHG emissions may also be included within our Scopes 1 and 2 inventories (as Scope 2 emissions).

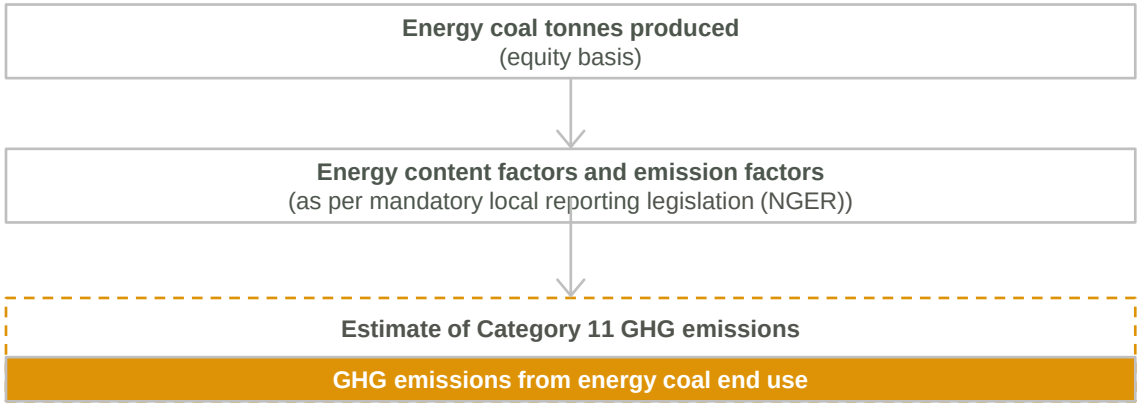
Key assumptions

- All energy coal is assumed to be combusted
- All energy coal is assumed to be bituminous (which has a mid-range energy content among the three sub-categories of black coal, the others being sub-bituminous coal and anthracite) listed in the Australian NGER Measurement Determination published by the Australian Government, from which these emission factors are sourced.

Data sources

- Production volumes are sourced from the BHP Operational Review for the year, with calculations performed on an equity basis
- Emission factors are sourced from the Australian NGER Determination published by the Australian Government, with the Scope 1 emission factors given for each fuel applied as the Scope 3 emission factor for the use of BHP's sold products.

Calculation methodology



Category 15: Investments

Scope 3 Standard category description

GHG emissions associated with the operation of the reporting company's investments (including equity and debt investments and project finance) in the reporting year, not already included in Scope 1 or Scope 2.

Calculation status rationale

Although this is not a material source of Scope 3 emissions in our value chain, GHG emissions associated with BHP's investments are relevant in that they contribute to the exposure of our business to climate-related risk.

Exclusions

Inclusions and exclusions are described in 'Scopes 1 and 2 emissions: Non-operational control' on page 13.

References

- GHG Protocol Technical Guidance for Calculating Scope 3 Emissions v1.0 – Supplement to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard; WRI/WBCSD; 2013; ghgprotocol.org/scope-3-calculation-guidance-2
- Solgold Annual Report 2023; solgold.com.au/investors/#financialReports

Calculation methodology

As described in 'Scopes 1 and 2 emissions: Non-operational control' on page 13.

Notes

- The accounting approach for equity investments as described in the Scope 3 Guidance is used to calculate these GHG emissions
- This category covers the Scopes 1 and 2 emissions (on an equity basis) from our assets that are owned (as a joint venture or other ownership structure) but not operated by us. The Scope 3 Standard categorises this as a downstream category, as the provision of capital or financing is framed as a service provided by us
- Our non-operated assets relevant to the FY2024 reporting year are described in 'Scopes 1 and 2 emissions: Non-operational control' on page 13
- Additional investments are added and divestments are removed each year as applicable
- Emissions from Tamakaya Energía SpA (Kelar Power Plant) that are additional to the GHG emissions reported under Scope 2 emissions for Escondida and Pampa Norte under the operational control boundary are reported in this category

BHP

GHG emissions targets and goals

Operational GHG emissions target and goal

Definitions and key details for our operational GHG emissions (Scopes 1 and 2 emissions from our operated assets) target and goal

Medium-term target	Long-term net zero goal
– **Description:** Reduce operational GHG emissions by at least 30 per cent from FY2020 levels by FY2030 – **Baseline year:** FY2020 – **Period:** FY2020 to FY2030 – **Type:** Absolute – **Reduction:** Gross; at least 30 per cent	– **Description:** Achieve net zero operational GHG emissions by CY2050 – **Reference year:** FY2020. FY2020 is used as a reference year to track progress towards our goal, but is not a baseline year for achieving our goal. – **Period:** FY2020 to CY2050 – **Type:** Absolute – **Reduction:** Net; 100 per cent (where we currently estimate up to around an 85 per cent gross operational GHG emissions reduction against FY2020 levels by CY2050 without the use of carbon credits for offsetting)
– **Inventory boundary:** Scopes 1 and 2 emissions: Operational control – **Exclusions:** Non-operated assets and equity investments (included in our value chain GHG emissions (Scope 3 emissions) long-term net zero goal) – **GHGs included:** CO_2, CH_4, N_2O, HFC, PFC, SF_6	
– **Offsetting:** Our plan is to achieve our medium-term target through structural GHG emissions abatement instead of offsetting our operational GHG emissions. We will not use regulatory carbon credits (i.e. those used for compliance under regulatory schemes such as the Safeguard Mechanism in Australia) to meet our target. In our projected pathway, we have not planned to use voluntary carbon credits to meet our medium-term target, but if there is an unanticipated shortfall in our pathway, we may use voluntary carbon credits that meet our integrity standards to close the performance gap	– **Offsetting:** Planned, to close the performance gap beyond our current estimate of up to around an 85 per cent gross operational GHG emissions reduction against FY2020 levels by CY2050 without the use of carbon credits for offsetting
– **Measurement approach:** Scope 1 emissions are calculated using emission factors and methodologies required under mandatory local regulatory programs where BHP operates, including the National Greenhouse Energy and Reporting (NGER) scheme for Australian operations, Green Tax legislation (referencing Intergovernmental Panel on Climate Change (IPCC) emission factors) for Chilean operations and Canadian Greenhouse Gas Reporting Program (referencing IPCC emission factors) for our Jansen potash project. In the absence of mandatory local regulatory programs, the Australian NGER scheme emission factors and methodology is used. Scope 2 emissions are calculated using the market-based method using electricity emission factors sourced directly from the supplier where available, as evidenced by Renewable Energy Certificates and/or supplier-provided documentation. Where supplier-specific emission factors are not available, a default location-based emission factor for electricity, as published in local regulations or industry frameworks, is used – **Key adjustments made to our baseline year, reference year and subsequent data:** Baseline year (for our target) and reference year (for our goal) and performance data have been adjusted for divestment of our interest in BMC (completed on 3 May 2022), divestment of our Petroleum business (merger with Woodside completed on 1 June 2022), BMA's divestment of the Blackwater and Daunia mines (completed on 2 April 2024), our acquisition of OZ Minerals (completed on 2 May 2023) and for methodology changes (use of IPCC Assessment Report 5 (AR5) Global Warming Potentials and the transition to a facility-specific GHG emission calculation methodology for fugitives at Caval Ridge and Saraji South)	

BHP

Operational GHG emissions target and goal continued

Definitions and key details for our operational GHG emissions (Scopes 1 and 2 emissions from our operated assets) target and goal continued

Medium-term target	Long-term net zero goal
– **Target/goal setting method:** Our target is measured on a cumulative GHG emission basis against an overall carbon budget. The target percentage reduction was established in FY2020 by applying the same rate of reduction to BHP's GHG emissions as the rate at which the world's GHG emissions would have to contract in order to meet the Paris Agreement goal to hold global average temperature increase to well-below 2°C above pre-industrial levels (known as the 'absolute contraction method')	– **Target/goal setting method:** Our goal was developed with the ambition to achieve net zero for our operational GHG emissions by CY2050. Our progress against this goal will be measured on an absolute basis
– **Target/goal derived using a sectoral decarbonisation approach:** No, our target was derived using the absolute contraction method specified earlier. At the time of setting the target, there were no mining sector-specific pathways for jurisdictions where we operate	– **Target/goal derived using a sectoral decarbonisation approach:** No, however our goal is consistent with the global net zero ambition
– **Processes for reviewing the setting of our target/goal:** The Board approves BHP's significant social, community and sustainability policies (upon recommendation from the Nomination and Governance Committee), including those related to climate change and climate transition planning, public sustainability goals and targets (including for GHG emission reductions). We review our GHG emissions targets and goals as part of the periodic development of an updated CTAP, or more frequently if required	
– **Processes for monitoring progress towards our target/goal:** Monitored on an annual basis through our business planning processes, which forecast operational GHG emissions and identify planned, proposed or potential GHG emission reduction projects out to CY2050. As part of this process, an internal GHG emissions target is set for the relevant financial year, and monitored through our annual reporting processes, with progress reviewed by management and the Board as part of publication of our annual reporting disclosures, or more frequently if required. Our target is also monitored on a six-monthly basis through our social value scorecard framework, with progress reviewed by management and the Board as part of publication of our half-year results (as well as annual reporting disclosures), or more frequently if required	
– **Third-party validation of our target/goal:** No, but we obtain reasonable assurance over our externally reported performance against our target and goal	
– **Carbon budget for our target/goal period:** 126.9 $MtCO_2$-e (FY2020 to FY20230). This reflects a linear reduction between our baseline year and the target year. In the interim years before FY2030, we periodically refer to our carbon budget to assess our cumulative GHG emissions against our carbon budget to FY2030. This enables us determine if we are on track to achieve our medium-term target or whether we anticipate potential use of voluntary carbon credits to close any performance gap by FY2030 (which we do not currently anticipate)	– **Carbon budget for our target/goal period:** For the period FY2020 to FY2030, refer to the carbon budget for our target. We do not currently use a carbon budget for the period beyond FY2030
– **Expected progression:** Progress towards our target and goal is expected to be non-linear and affected by organic changes in our production of commodities	

BHP

Value chain GHG emissions medium-term goals

Definitions and key details for our value chain GHG emissions (Scope 3 emissions) medium-term goals

Medium-term goal for steelmaking

- **Description:** Support industry to develop steel production technology capable of 30 per cent lower GHG emissions intensity relative to conventional blast furnace steelmaking, with widespread adoption expected post-CY2030
- **Reference year:** CY2020 (global average GHG emissions intensity for conventional blast furnace steelmaking as at CY2020, being 2.2 tonnes of CO_2 per tonne of crude steel. Source: IEA Iron and Steel Technology Roadmap (October 2020)). CY2020 is used as a reference year to assess the potential of collaborative partnerships and venture capital investments to which we may commit funding (refer to 'measurement approach' later in this table), but is not a baseline year for achieving our goal
- **Period:** FY2020 to CY2030
- **Type:** Not applicable
- **Reduction:** Not applicable
- **Boundary:** Not applicable
- **Exclusions:** Not applicable
- **GHGs included:** Not applicable
- **Offsetting:** Not applicable
- **Measurement approach:** Committed funding (US$) for collaborative partnerships and venture capital investments with the aim to support industry to develop steel production technology capable of 30 per cent lower GHG emissions intensity relative to conventional blast furnace steelmaking

Medium-term goal for shipping

- **Description:** Support 40 per cent emissions intensity reduction of BHP-chartered shipping of BHP products.
- **Baseline year:** CY2008 (reflecting International Maritime Organisation (IMO) objectives for the shipping industry)
- **Period:** CY2008 to CY2030
- **Type:** Intensity
- **Reduction:** Gross; 40 per cent
- **Boundary:**
  - GHG emissions from maritime transportation not owned or operated by BHP, but chartered and paid for by BHP, where the transportation was of BHP-produced products sold by BHP. In some cases, the goal's boundary may differ from the boundaries under mandatory reporting
  - Inventory boundary: Scope 3, Category 4, shipping of BHP products only
- **Exclusions:**
  - GHG emissions from maritime transportation owned, operated and/or chartered and paid for by a third party, where the transportation was of BHP-produced products sold by BHP
  - GHG emissions from maritime transportation not owned or operated by BHP, but chartered and paid for by BHP, where the transportation was of third-party-produced products sold by BHP (pursuant to our third-party-trading activity)
  - GHG emissions from maritime transportation not owned or operated by BHP, but chartered and paid for by BHP or a third party, where the transportation was of products purchased by BHP
- **GHGs included:** CO_2, CH_4, N_2O
- **Offsetting:** Not planned but will be periodically assessed
- **Measurement approach:** Average gCO_2-e per deadweight tonne per nautical mile (gCO_2-e/dwt/nm), weighted based on IMO defined vessel size ranges utilised by BHP during the time period, using a well-to-wake CO_2-e emission factor from EU Regulation 2023/1805

BHP

Value chain GHG emissions medium-term goals continued

Definitions and key details for our value chain GHG emissions (Scope 3 emissions) medium-term goals continued

Medium-term goal for steelmaking	Medium-term goal for shipping
– **Key adjustments made to our baseline year, reference year and subsequent data:** Not applicable – **Goal setting method:** Qualitative. Tracked based on the funding (US$) we commit in collaborative partnerships and venture capital investments with the aim to support industry to develop steel production technology capable of 30 per cent lower GHG emissions intensity relative to conventional blast furnace steelmaking – **Goal derived using a sectoral decarbonisation approach:** Not applicable	– **Key adjustments made to our baseline year, reference year and subsequent data:** Baseline year and performance data have been adjusted to only include voyages associated with the transportation of commodities currently in BHP's portfolio due to the data availability challenges of adjusting by asset or operation for CY2008 and subsequent year data. GHG emissions intensity calculations currently include the transportation of copper, iron ore, steelmaking coal, energy coal, molybdenum, uranium and nickel. Baseline year and performance data have also been adjusted for a methodology change to use maritime transport emission factors from EU Regulation 2023/1805, after The British Standards Institution EN 16258 standard (the source of the emission factors we previously used) was withdrawn in CY2023 – **Goal setting method:** Set as a point in time, i.e. with the specific date of 'by CY2030' for our goal to support a 40 per cent GHG emissions intensity reduction of BHP-chartered shipping of BHP products, while reflecting the challenges and uncertainty and our inability (as BHP alone) to ensure Scope 3 emission reductions. As a result, the goal is not based on a trajectory and does not imply a specific carbon budget, and so Scope 3 emissions may fluctuate (with some increases and/or non-linear decreases) during the period before the goal date – **Goal derived using a sectoral decarbonisation approach:** No, although our goal is generally consistent with the IMO's CY2030 emissions intensity goal for the international shipping sector and we selected CY2008 as our goal's baseline year to align with the base year for the IMO's CY2030 goal and its corresponding reasoning and strategy
– **Processes for reviewing the setting of the goal:** The Board approves BHP's significant social, community and sustainability policies (upon recommendation from the Nomination and Governance Committee), including those related to climate change and climate transition planning, public sustainability goals and targets (including for GHG emission reductions). We review our GHG emissions targets and goals as part of the periodic development of an updated CTAP, or more frequently if required – **Processes for monitoring progress towards our goal:** Monitored on a six-monthly basis through our social value scorecard framework, with progress reviewed by management and the Board as part of publication of our half-year results and annual reporting disclosures, or more frequently if required – **Third-party validation of our goal:** No, but we obtain limited assurance over our externally reported performance against our goals	
– **Carbon budget for our goal period:** Not applicable – **Expected progression:** Not applicable	– **Carbon budget for our goal period:** Our goal is not based on a trajectory and does not imply a specific carbon budget – **Expected progression:** Progress towards our goal is expected to be non-linear and affected by organic changes in our production of commodities and associated increases in vessel chartering, due to the dependence on the availability of GHG emission reduction solutions more broadly across the shipping industry

Value chain GHG emissions long-term net zero targets and goal

Definitions and key details for our value chain GHG emissions (Scope 3 emissions) long-term net zero targets and goal

Value chain long-term net zero goal	Shipping long-term net zero target	Direct suppliers long-term net zero target
– **Description:** We have a long-term goal of net zero Scope 3 GHG emissions by CY2050. Achievement of this goal is uncertain, particularly given the challenges of a net zero pathway for our customers in steelmaking, and we cannot ensure the outcome alone	– **Description:** Target net zero by CY2050 for the GHG emissions from all shipping of BHP products. Ability to achieve the target is subject to the widespread availability of carbon neutral solutions to meet our requirements, including low to zero GHG emission technologies, fuels, goods and services	– **Description:** Target net zero by CY2050 for the operational GHG emissions of our direct suppliers. Ability to achieve the target is subject to the widespread availability of carbon neutral solutions to meet our requirements, including low to zero GHG emissions technologies, fuels, goods and services
– **Reference year:** FY2020. FY2020 is used as a reference year to track progress towards our targets and goal, but is not a baseline year for achieving our targets or goal – **Period:** FY2020 to CY2050 – **Type:** Absolute – **Reduction:** Net; 100 per cent		

– **Boundary:**
  – Total reported Scope 3 emissions are estimated on an equity basis for downstream GHG emissions. For the upstream GHG emissions component, the boundary is defined on a category-by-category basis due to data limitations
  – Inventory boundary: Scope 3 emissions
– **Exclusions:** Refer to exclusions for our shipping and suppliers targets
– **GHGs included:** Defined by the available data, which differs by Scope 3 emissions category. We intend to continue to improve our GHG emission calculations over time to encompass specific greenhouse gases as data becomes available
	– **Boundary:**
	  – GHG emissions from maritime transportation not owned or operated by BHP where the transportation was of BHP-produced products sold by BHP. May be BHP-chartered or third-party-chartered. In some cases, the target's boundary may differ from the boundaries under mandatory reporting
	  – Inventory boundary: Scope 3 emissions, Categories 4 and 9, shipping of BHP products only
	– **Exclusions:**
	  – GHG emissions from maritime transportation not owned or operated by BHP, but chartered and paid for by BHP, where the transportation was of third-party-produced products sold by BHP (pursuant to our third-party-trading activity)
	  – GHG emissions from maritime transportation not owned or operated by BHP, but chartered and paid for by BHP or a third party, where the transportation was of products purchased by BHP
	– **GHGs included:** CO_2, CH_4, N_2O
		– **Boundary:**
		  – Scopes 1 and 2 emissions of our direct suppliers included in BHP's reported Scope 3 emissions reporting categories of purchased goods and services (including capital goods), fuel- and energy-related activities, business travel and employee commuting. In some cases, the target's boundary may differ from the boundaries under mandatory reporting
		  – Inventory boundary: Scope 3 emissions, Categories 1, 3, 6 and 7 (subset) emissions are being used as a proxy for the Scopes 1 and 2 emissions of our direct suppliers
		– **Exclusions:** Scope 3 emissions (for our direct suppliers) associated with our purchased goods and services (including capital goods), fuel- and energy-related activities, business travel and employee commuting
		– **GHGs included:** Defined by the available data, which differs by Scope 3 emissions category. We intend to continue to improve our GHG emission calculations over time to encompass specific greenhouse gases as data becomes available

Value chain GHG emissions long-term net zero targets and goal continued

Definitions and key details for our value chain GHG emissions (Scope 3 emissions) long-term net zero targets and goal continued

Value chain long-term net zero goal	Shipping long-term net zero target	Suppliers long-term net zero target
– **Offsetting:** We anticipate offsetting by our customers, suppliers and other third parties will play a role in meeting our long-term net zero goal (and potentially our long-term net zero targets), particularly for residual GHG emissions in steelmaking which are not currently expected to reach zero by CY2050. Where third parties offset their GHG emissions that appear in our reported Scope 3 emissions inventory, we plan to recognise and report the net GHG emissions after offsetting. Carbon credits sourced by third parties in our value chain and associated with GHG emissions that appear in our reported Scope 3 emissions inventory would need to be high-integrity before we recognised that offsetting in our reporting.		
– **Measurement approach:** Description of the calculation methodology used for each Scope 3 emissions category can be found in the BHP GHG Emissions Calculation Methodology 2024, available at bhp.com/climate – **Key adjustments made to our baseline year, reference year and subsequent data:** Category 1, Category 3, Category 4 (maritime component), Category 9 (maritime component), Category 10, Category 11 and Category 15 GHG emissions in reference year and performance data have been adjusted for the divestment of our interest in Cerrejón (with an effective economic date of 31 December 2020), divestment of our interest in BMC (completed on 3 May 2022), divestment of our interest in the Rhourde Ouled Djemma (ROD) Integrated Development (completed in April 2022), divestment of our Petroleum business (merger with Woodside completed on 1 June 2022), BMA's divestment of the Blackwater and Daunia mines (completed on 2 April 2024), and acquisition of OZ Minerals (completed on 2 May 2023). The remaining categories have not been adjusted due to their immateriality to our long-term net zero goal	– **Measurement approach:** Vessel- and voyage-specific GHG emissions calculated using maritime transport emission factors from EU Regulation 2023/1805 – **Key adjustments made to our baseline year, reference year and subsequent data:** Category 4 (maritime component) and Category 9 (maritime component) GHG emissions in reference year and performance data have been adjusted for a methodology change to use maritime transport emission factors from EU Regulation 2023/1805, after The British Standards Institution (BSI) EN 16258 standard (the source of the emission factors we previously used) was withdrawn in CY2023, and have been adjusted for the divestment of our interest in BMC (completed on 3 May 2022), divestment of our Petroleum business (merger with Woodside completed on 1 June 2022), BMA's divestment of the Blackwater and Daunia mines(completed on 2 April 2024) and acquisition of OZ Minerals (completed on 2 May 2023)	– **Measurement approach:** As a proxy for measurement of the Scopes 1 and 2 emissions of our direct suppliers, progress is currently measured using Categories 1, 3, 6 and 7 emissions data using a mix of spend-based and activity-based methodology – **Key adjustments made to our baseline year, reference year and subsequent data:** Category 1 and Category 3 GHG emissions in reference year and performance data have been adjusted for the divestment of our interest in BMC (completed on 3 May 2022), divestment of our Petroleum business (merger with Woodside completed on 1 June 2022), BMA's divestment of the Blackwater and Daunia mines (completed on 2 April 2024) and acquisition of OZ Minerals (completed on 2 May 2023). Categories 6 and 7 were not adjusted due to their immateriality to our long-term net zero target

BHP

Value chain GHG emissions long-term net zero targets and goal continued

Definitions and key details for our value chain GHG emissions (Scope 3 emissions) long-term net zero targets and goal continued

Value chain long-term net zero goal	Shipping long-term net zero target	Suppliers long-term net zero target

- **Target/goal setting method:** Set as a point in time, i.e. with the specific date of 'by CY2050' to reach the target or goal of net zero, while reflecting the challenges and uncertainty and our inability (as BHP alone) to ensure Scope 3 emission reductions. As a result, the target or goal is not based on a trajectory and does not imply a specific carbon budget, and Scope 3 emissions may fluctuate (with some increases and/or non-linear decreases) during the period before the target or goal date
- **Target/goal derived using a sectoral decarbonisation approach:** No
- **Processes for reviewing the setting of our target/goal:** The Board approves BHP's significant social, community and sustainability policies (upon recommendation from the Nomination and Governance Committee), including those related to climate change and climate transition planning, public sustainability goals and targets (including for GHG emission reductions). We review our GHG emissions targets and goals as part of the periodic development of an updated CTAP, or more frequently if required
- **Processes for monitoring progress towards our target/goal:** Monitored on a yearly basis through our annual reporting processes, with progress reviewed by management and the Board as part of publication of our annual reporting disclosures, or more frequently if required
- **Third-party validation of our target/goal:** No, but we obtain limited assurance over our externally reported performance against our targets and goal
- **Carbon budget for our target/goal period:** Our targets and goal are not based on trajectories and do not imply specific carbon budgets
- **Expected progression:** Progress towards our targets and goal is expected to be non-linear and affected by organic changes in our production of commodities

BHP

Additional information

Scope 3 emissions, Category 10: Processing of sold products – steelmaking calculations

Processing iron ore to steel

Item	Quantity	Notes
Our FY2024 iron ore production (on an equity basis)	248,717,350 wet metric tonnes	**Assumptions** Production volumes approximate sales volumes; small year-end inventory volumes will be smoothed out over year-on-year calculations **Reference sources** BHP Operational Review for the year ended 30 June 2024; BHP; 2024; bhp.com/investors/financial-results-operational-reviews
Crude steel equivalent	142,925,835 tonnes	**Assumptions** – Assumed that all iron ore sold is processed in crude steelmaking together with our steelmaking coal and third-party steelmaking coal. BHP produces more iron ore than steelmaking coal. Therefore, additional third-party steelmaking coal is required to process our iron ore globally – Crude steel produced is attributable to iron ore only (not scrap steel) – Conversion factor is calculated based on the average iron (Fe) content of our iron ore products and the average Fe content of crude steel from International Energy Agency (IEA) Iron and Steel Carbon Capture and Storage (CCS) Study (April 2013). A minor portion of the average Fe content is estimated using 9-month data **Reference sources** IEA Iron and Steel CCS Study (April 2013), page A3-16; ieaghg.org/publications/iron-and-steel-ccs-study-techno-economics-integrated-steel-mill/
Emission factor	2.2 tCO_2-e per tonne of crude steel cast	**Assumptions** – Global average emissions intensity for the blast furnace basic oxygen furnace processing route – Assumes all iron ore production (including from non-operated assets) goes via the blast furnace basic oxygen furnace route – Iron ore allocation includes Scope 3 emissions from third-party steelmaking coal necessary to process our iron ore and is calculated based on the difference between total steelmaking GHG emissions and our steelmaking coal GHG emissions **Reference sources** IEA Iron and Steel Technology Roadmap (October 2020), page 43; iea.org/reports/iron-and-steel-technology-roadmap

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Scope 3 emissions, Category 10: Processing of sold products – steelmaking calculations continued

Processing steelmaking coal to steel

Item	Quantity	Notes
Our FY2024 steelmaking coal production	21,903,008 metric tonnes	**Assumptions** – Assumed that production volumes approximate sales volumes; small year-end inventory volumes will be smoothed out over year-on-year calculations – BMA produces a small amount of product that is marketed as energy coal. This has been estimated based on share of sales percentage and excluded from the steelmaking coal production figure **Reference sources** – BHP Operational Review for the year ended 30 June 2024; BHP; 2024; bhp.com/investors/financial-results-operational-reviews
Crude steel equivalent	28,080,779 tonnes	**Assumptions** – Assumed that all steelmaking coal sold is processed in crude steelmaking together with BHP's iron ore – Crude steel produced is attributable to iron ore only (not scrap steel) – Conversion factor is based on the average input mass ratio of steelmaking coal of 0.78 tonnes per tonne of crude steel to the blast furnace basic oxygen furnace steelmaking route **Reference sources** – Worldsteel publication – Fact sheet Steel and raw materials, 2019, p.1 worldsteel.org/
Emission factor	2.2 tCO_2-e per tonne of crude steel cast	**Assumptions** – Assumed that all steelmaking coal sold is processed in crude steelmaking together with BHP's iron ore – Crude steel produced is attributable to iron ore only (not scrap steel) – GHG emissions are allocated based on the ratio of steelmaking coal versus iron ore to the blast furnace basic oxygen furnace steelmaking route (i.e. 36.3 per cent) **Reference sources** – IEA Iron and Steel Technology Roadmap (October 2020), page 43; iea.org/reports/iron-and-steel-technology-roadmap

BHP

Units of measurement and glossary

Units of measurement

CO_2-e: Carbon dioxide equivalent

Mt: Million tonnes

dwt: Deadweight tonnage

nm: Nautical mile

Glossary

Activity data: A quantitative measure of a level of activity that results in GHG emissions. Activity data is multiplied by an energy and/or emissions factor to derive the energy consumption and GHG emissions associated with a process or an operation. Examples of activity data include kilowatt-hours of electricity used, quantity of fuel used, output of a process, hours equipment is operated, distance travelled and floor area of a building.

Assets (in relation to BHP): A set of one or more geographically proximate operations (including open-cut mines and underground mines). Assets include our operated assets and non-operated assets.

Baseline/baseline year (with respect to GHG emissions targets and goals): A year used as a basis to compare and measure performance of subsequent years.

Biofuel/biodiesel: A fuel, usually a liquid fuel, produced from renewable biological feedstock sources, such as plant material, vegetation or agricultural waste.

BMA: BHP Mitsubishi Coal.

Capital goods: Final goods that have an extended life and are used by the company to manufacture a product, provide a service, or sell, store, and deliver merchandise. In financial accounting, capital goods are treated as fixed assets or plant, property and equipment (PP&E). Examples of capital goods include equipment, machinery, buildings, facilities, and vehicles.

Carbon credit: The reduction or removal of carbon dioxide, or the equivalent amount of a different greenhouse gas (GHG), using a process that measures, tracks and captures GHGs to compensate for an entity's GHG emissions exuded elsewhere. Credits may be generated through projects in which GHG emissions are avoided, reduced, removed from the atmosphere or permanently stored (sequestration). Carbon credits are generally created and independently verified in accordance with either a voluntary program or under a regulatory program. The purchaser of a carbon credit can 'retire' or 'surrender' it to claim the underlying reduction towards their own GHG emissions reduction targets or goals or to meet legal obligations, which is also referred to as carbon offsetting or offsetting.

We define regulatory carbon credits to mean carbon credits used to offset GHG emissions for regulatory compliance in our operational locations (such as the Safeguard Mechanism in Australia).

We define voluntary carbon credits to mean carbon credits generated through projects that reduce or remove GHG emissions outside the scope of regulatory compliance (including Australian Carbon Credit Units not used for regulatory compliance).

Carbon dioxide equivalent: The universal unit of measurement to indicate the global warming potential of each greenhouse gas, expressed in terms of the global warming potential of one unit of carbon dioxide. It is used to evaluate releasing (or avoiding releasing) different greenhouse gases against a common basis.

Carbon neutral: Making or resulting in no net release of GHG emissions into the atmosphere, including as a result of offsetting. Includes all those greenhouse gas emissions as defined for BHP reporting purposes.

Cradle-to-gate: All GHG emissions that occur in the lifecycle of purchased products, up to the point of receipt by the reporting company (excluding GHG emissions from sources that are owned or controlled by the reporting company).

Direct GHG emissions: Emissions from sources that are owned or controlled by the reporting company.

Downstream GHG emissions: Indirect GHG emissions from sold goods and services. Downstream emissions also include emissions from products that are distributed but not sold (i.e. distributed without receiving payment).

Emission factor: A factor that converts activity data into greenhouse gas emissions data (e.g. $kgCO_2$-e emitted per GJ of fuel consumed, $kgCO_2$-e emitted per KWh of electricity used).

Energy (in relation to BHP): All forms of energy products where 'energy products' means combustible fuels, heat, renewable energy, electricity or any other form of energy from operations that are owned or controlled by BHP. The primary sources of energy consumption come from fuel consumed by haul trucks at our operated assets, as well as purchased electricity used at our operated assets.

Energy content factor: The energy content of a fuel is an inherent chemical property that is a function of the number and types of chemical bonds in the fuel.

BHP

Units of measurement and glossary continued

Glossary continued

Equity share approach: A consolidation approach whereby a company accounts for GHG emissions from operations according to its share of equity in the operation. The equity share reflects economic interest, which is the extent of rights a company has to the risks and rewards flowing from an operation. Also see the definition for Operational control approach.

Financial control approach: A consolidation approach whereby a company reports GHG emissions based on the accounting treatment in the company's consolidated financial statements, as follows:

- 100 per cent for operations accounted for as subsidiaries, regardless of equity interest owned.
- For operations accounted for as a joint operation, the company's interest in the operation.

It does not report GHG emissions from operations that are accounted for using the equity method in the company's financial statements.

Refer to 'Organisational boundaries' on page 5 for an explanation of certain departures from this approach that currently apply to BHP's reported GHG emissions inventory under the Financial control approach.

Fugitive methane emissions: Methane emissions that are not physically controlled but result from the intentional or unintentional releases of methane from coal mining.

Global warming potential (GWP): A factor describing the radiative forcing impact (degree of harm to the atmosphere) of one unit of a given greenhouse gas relative to one unit of CO_2. BHP currently uses GWP from the Intergovernmental Panel on Climate Change Assessment Report 5 (AR5) based on a 100-year timeframe.

Goal (for BHP with respect to GHG emissions): An ambition to seek an outcome for which there is no current pathway(s), but for which efforts are being or will be pursued towards addressing that challenge, subject to certain assumptions or conditions. Such efforts may include the resolution of existing potential or emerging pathways.

Greenhouse gas (GHG): For BHP reporting purposes, these are the aggregate anthropogenic carbon dioxide equivalent emissions of carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6). Nitrogen trifluoride (NF_3) GHG emissions are currently not relevant for BHP reporting purposes.

Grid: A system of power transmission and distribution (T&D) lines under the control of a coordinating entity or 'grid operator', which transfers electrical energy generated by power plants to energy users also called a 'power grid'.

Indirect GHG emissions: Emissions that are a consequence of the activities of the reporting company, but occur at sources owned or controlled by another company.

Intergovernmental Panel on Climate Change: The United Nations body for assessing the science related to climate change.

Life cycle: Consecutive and interlinked stages of a product system, from raw material acquisition or generation of natural resources to end of life.

Location-based reporting: Scope 2 emissions based on average energy generation emission factors for defined geographic locations, including local, subnational, or national boundaries (i.e. grid factors). In the case of a direct line transfer, the location-based emissions are equivalent to the market-based emissions.

Lower GHG emission (other than for shipping fuels): Capable of lower absolute GHG emissions or GHG emissions intensity than the current state or the conventional or incumbent technology, as applicable.

Low to zero GHG emissions (for shipping): Capable of between 81 per cent to 100 per cent lower GHG emissions intensity (gCO_2-e/joule) on a well-to-wake basis compared to conventional fossil fuels used in shipping.

Low to zero GHG emissions (for energy products other than shipping fuels): Capable of between 90 per cent to 100 per cent lower GHG emissions intensity during generation and/or combustion (as applicable) compared to conventional fossil fuel generation and/or combustion.

Market-based reporting: Scope 2 emissions based on the generators (and therefore the generation fuel mix from which the reporting company contractually purchases electricity and/or is directly provided electricity via a direct line transfer).

NGER: Australia's National Greenhouse and Energy Australia's National Greenhouse and Energy Reporting regime.

Net zero (for a BHP GHG emissions target, goal or pathway, or similar): Includes the use of carbon credits as governed by our approach to carbon offsetting. Our approach to carbon offsetting is available at bhp.com/climate.

Net zero (for industry sectors, the global economy, transition or future, or similar): A state in which the greenhouse gases (as defined in this Glossary) going into the atmosphere are balanced by removal out of the atmosphere.

Nickel intermediates: Includes BHP nickel concentrates, matte, residue and mixed sulphides.

Offsetting (with respect to GHG emissions): The use of carbon credits. Refer to the definition of carbon credit.

BHP

Units of measurement and glossary continued

Glossary continued

Operated assets: Operated assets are our assets (including those under exploration, projects in development or execution phases, and sites and operations that are closed or in the closure phase) that are wholly owned and operated by BHP or that are owned as a BHP- operated joint venture. References in this methodology to a 'joint venture' are used for convenience to collectively describe assets that are not wholly owned by BHP. Such references are not intended to characterise the legal relationship between the owners of the asset.

Operational control approach: A consolidation approach whereby a company accounts for 100 per cent of the GHG emissions over which it has operational control (a company is considered to have operational control over an operation if it or one of its subsidiaries has the full authority to introduce and implement its operating policies at the operation). It does not account for GHG emissions from operations in which it owns an interest but does not have operational control. Refer also to the definition for Equity share approach.

Operational GHG emissions: Scopes 1 and 2 emissions from our operated assets.

Operations: Open-cut mines, underground mines and processing facilities which, in the case of BHP are within our operated assets. For the purposes of our operational energy consumption and GHG emissions inventories, assets under exploration, projects in development or execution phases, and sites and operations that are closed or in the closure phases are also included.

Organisational boundaries: The boundaries that determine the operations owned or controlled by the reporting company, depending on the consolidation approach taken (equity or control approach).

Proxy: Data from a similar process or activity that is used as a stand-in for the given process or activity without being customised to be more representative of the given process or activity.

Reference year (for a BHP GHG emissions target or goal): A year used to track progress towards GHG emissions targets and goals. It is not a baseline year for GHG emissions targets and goals.

Scope 1 emissions: Direct greenhouse gas emissions from operations that are owned or controlled by the reporting company For BHP, these are primarily greenhouse gas emissions from fuel consumed by haul trucks at our operated assets, as well as fugitive methane emissions from coal production at our operated assets.

Scope 2 emissions: Indirect greenhouse gas emissions from the generation of purchased or acquired electricity, steam, heat or cooling that is consumed by operations that are owned or controlled by the reporting company. BHP's Scope 2 emissions have been calculated using the market-based method unless otherwise specified.

Scope 3 emissions: All other indirect greenhouse gas emissions (not included in Scope 2 emissions) that occur in the reporting company's value chain. For BHP, these are primarily greenhouse gas emissions resulting from our customers using and processing the commodities we sell, as well as upstream GHG emissions associated with the extraction, production and transportation of the goods, services, fuels and energy we purchase for use at our operations; emissions resulting from the transportation and distribution of our products; and operational greenhouse gas emissions (on an equity basis) from our non-operated joint venture assets.

Scope 2 Guidance: GHG Protocol: Scope 2 Guidance (An amendment to the GHG Protocol Corporate Standard)

Scope 3 Guidance: GHG Protocol Technical Guidance for Calculating Scope 3 Emissions.

Scope 3 Standard: GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Target (for BHP with respect to GHG emissions): An intended outcome in relation to which we have identified one or more pathways for delivery of that outcome, subject to certain assumptions or conditions.

Target (for BHP with respect to GHG emissions): An intended outcome in relation to which we have identified one or more pathways for delivery of that outcome, subject to certain assumptions or conditions.

Upstream GHG emissions: Indirect GHG emissions from purchased or acquired goods and services.

Value chain: All upstream and downstream activities associated with the operations of the reporting company, including the use of sold products by consumers and the end-of-life treatment of sold products after consumer use. GHG emissions in BHP's value chain refers to BHP's reported Scope 3 emissions inventory (see also the definition for Scope 3 emissions).

Value chain GHG emissions: Scope 3 emissions in our reported GHG emissions inventory.

Well-to-wake basis: Inclusive of the GHG emissions across the entire process of fuel production, delivery and use onboard vessels.

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