AngloAmerican

Anglo American GHG emissions calculation methodology 2024

Our calculation methodology for Scopes 1, 2, and 3 greenhouse gas emissions

Contents

About this document

This document sets out the approach we have taken to calculate our Scopes 1, 2 and 3 greenhouse gas (GHG) emissions, as reported in our published Integrated Annual Report 2024, Sustainability Report 2024, and ESG Factbook.

These publications are on our website at:
angloamerican.com/investors/annual-reporting
& angloamerican.com/esg-policies-and-data/

Alignment to GHG Protocol

To calculate our the GHG emissions for our orgnaisation, we have used methodologies consistent with the Greenhouse Gas (GHG) Protocol: A Corporate Accounting and Reporting Standard (the **'GHG Protocol'**). We have also made reference to the additional guidance provided in the GHG Protocol: Scope 2 Guidance (An amendment to the GHG Protocol Corporate Standard) (Scope 2 Guidance), the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (Scope 3 Standard) and the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (Scope 3 Guidance). Any exclusions to the GHG Protocol standards and guidance are highlighted in the relevant section of this document.

In determining the GHG emissions for our business, we take input from best practice across our industry and consider guidance from a range of other standards in preparing the disclosures, including materials such as the Intergovernmental Panel on Climate Change (IPCC) Guidelines for National GHG Inventories and the International Standard ISO 14064-1.

The GHG Protocol emission scopes

The GHG Protocol classifies a company's GHG emissions into three 'scopes':

- **Scope 1 emissions** are direct emissions from owned or controlled sources.
- **Scope 2 emissions** are indirect emissions from the generation of purchased energy.
- **Scope 3 emissions** are all indirect emissions (not included in scope 2) that occur in the value chain of the reporting company, including both upstream and downstream emissions.

We refer to Scopes 1 and 2 collectively as our **Operational GHG emissions**, and we refer to our Scope 3 emissions as our **Value Chain GHG emissions**.

Assurance

Under AccountAbility's AA1000AS v3 (2020), independent High assurance has been provided in respect of our reported Scope 1 and 2 emissions and independent Moderate assurance for our reported Scope 3 emissions.

For the assurance statement relating to Scopes 1, 2 and 3 emissions, see pages 127-128 of our Sustainability Report 2024.

Changes for 2024

We have made no material changes to the calculation of our Scope 1 and 2 emissions from previous years.

For Scope 3, in calculating our emissions for the 2024 financial year we have made the below changes from the prior year. To reflect the imapct of these changes, there has been a restatement of our Scope 3 emission factors for the prior 2023 financial year and our 2020 baseline reference year.

Scope 3 – Categories 1 and 2

To reflect the increasing maturity in our methodology, and the increased understanding of the emissions sources of our suppliers and our own operations, we have further refined the emissions factors used in our calculations to better reflect actual emission footprints.

Scope 3 – Category 10 and 11

In previous years, we accounted for the emissions of our steelmaking customers by allocating these emissions between our iron ore and steelmaking coal products on a mass balance basis, with 65% of steelmaking emissions allocated to iron ore under category 10, and the remaining 35% allocated to steelmaking coal under category 11.

To increase our alignment with the GHG Protocol, we have updated our methodology to fully account for the emissions arising from the use of our steelmaking coal and iron ore and in the production of steel, and account for the emissions associated with the use and processing of our products independently, regardless of the value chains they enter.

Under our changed methodology, emissions from the processing of iron ore are calculated based on customer specific emissions factors with 100% of emissions allocated to iron ore, under category 10. Emissions from the use of our steelmaking coal are calculated based on the calrofic value of our product and the greenhouse gas emissions arising from its use, with 100% of these calculated emissions allocated to steelmaking coal under category 11.

Operational GHG emissions (Scopes 1 and 2)

The Anglo American Group Energy and Greenhouse Gas Emissions Management Standard define the minimum mandatory requirements for managing energy and greenhouse gas emissions at our managed operations.

For internal use we record and maintain our detailed methodology within our Scopes 1 and 2 GHG emissions calculation methodology document.

Principles of our methodology

Relevance

Reporting on GHG emissions provides our stakeholders with a transparent account of how we address GHG emissions a material sustaibility issue for Anglo American.

Our Integrated Annual Report 2024 includes our reported energy and GHG emissions. Individual reports are also published annually for the De Beers, Platinum Group Metals and Kumba Iron Ore businesses, and provide greater detail on energy and GHG performance.

Completeness

Boundary
Anglo American repoorts GHG emisisons in line with the GHG Protocol's Operational Control approach. Reporting on our GHG inventory includes all businesses over which the Anglo American Group has management control or acts as the operator. It excludes independently managed operations, such as Collahuasi and Samancor, unless specifically stipulated. It also excludes De Beers' non-managed joint operations in Namibia and Botswana from our reporting scope, unless specifically stipulated in the reporting.

GHG emission sources and activities
Anglo American as a Group, records the energy and emission sources utilised by its managed operations.

Anglo American records activity data where practiable and applies relevant emissions factors from either local regulations or where these are not avialable we utilise the default IPCC emisisons factors .

The 2006 IPCC Guidelines define activity data as:

Data on the magnitude of a human activity resulting in emissions or removals taking place during a given period.

Examples of activity data include:

- Diesel used in haulage trucks (Liters or m^3)
- Diesel used in static power generaiton (Liters or m^3)
- Petrol used in mining equipment (m^3)
- LPG used for heating (tonnes)
- Coal for heating and energy generation (tonnes)
- Electricity consumption (kWh or GJ)

Consistency

Quantifying GHG Emissions
Anglo American quantify GHG emissions by recording data on energy usage for activities applying energy conversion factors and emissions factors.

For quantifying GHG emissions from fuel sources (Scope 1 emissions), all activity data for fuel types is converted to the mass of fuel in tonnes or volume in cubic meters for the reporting period and the relevant energy and GHG emissions factors are then applied.

When emission factors are used to determine GHG emissions, the factors are multiplied by the absolute quantities of the emissions activity over the reporting period.

For quantifying GHG emissions from electricity consumption (Scope 2 emissions), all activity data for electricity consumed is converted to GJ (Giga Joule).

Where there are material changes to the GHG emission calculation method, the emissions for the affected business is restated for every year back to the base year.

Conversion factors
A conversion factor is a coefficient that allows converting one unit of measurement into another unit of measurement.

Emission Factors
Emission factor (EF) are coefficients that measures the rate at which GHG is emitted or removed per unit of activity.

Transparency

All operations report their consumption and activity data, including production data on the Group's central data repository. To ensure that the calculations remain consistent with the methodologies applied this data repository is the only source of energy and emissions data utilised for calculation and reporting.

This data is verified by businesses and Group and independently audited annually. As part of the verification process and first line of assurance the businesses also conduct a self-assessment against the Anglo American Group Energy and Greenhouse Gas Emissions Management Standard to ensure adherence to the defined processes.

Accuracy

To ensure that the energy and GHG inventory for our operations remains accurate and representative of the activities taking place, our Group standard and associated guideline make provisions for data reviewing by the operations energy and GHG management team,

as well as Group SMEs on a monthly basis to ensure that the data is accurate, is comparable to previous periods and that performance meets expectations in order to achieve committed goals.

Value chain emissions (Scope 3)

Context

This methodology report outlines Anglo American's evolving approach to Scope 3 reporting and reflects its commitment to enhancing its methodology, achieving decarbonization targets, advancing internal Scope 3 management practices, and providing insights into climate change progress.

Anglo American reports across all 15 categories of Scope 3 (excluding categories 8 and 13 which are not relevant to our business).

Boundary Setting

This section summarises the Scope 3 reporting and organisation boundary applied by the methodology, along with key inclusions and exclusions for reference.

Organisational structure

Anglo American's business is managed through a regional model covering Americas, Africa and Australia. However, for Scope 3 reporting, product value chains have been identified as the most meaningful approach for management and monitoring purposes. Emissions have been attributed to operations, which have been categorised by the major commodity sold, namely:

- Copper
- Iron Ore
- Steelmaking Coal (which also produces a small quantum of Thermal Coal)
- Nickel
- Platinum Group Metals (including base metal by-products)
- Diamonds

Anglo American's Marketing business is engaged in 3rd Party commodity trading. For ease and consistency of communication, the traded commodities have been computed and reported separately due to the distinctions made between these product volumes and the product volumes mined by Anglo American within the company and in Scope 3 accounting approaches.

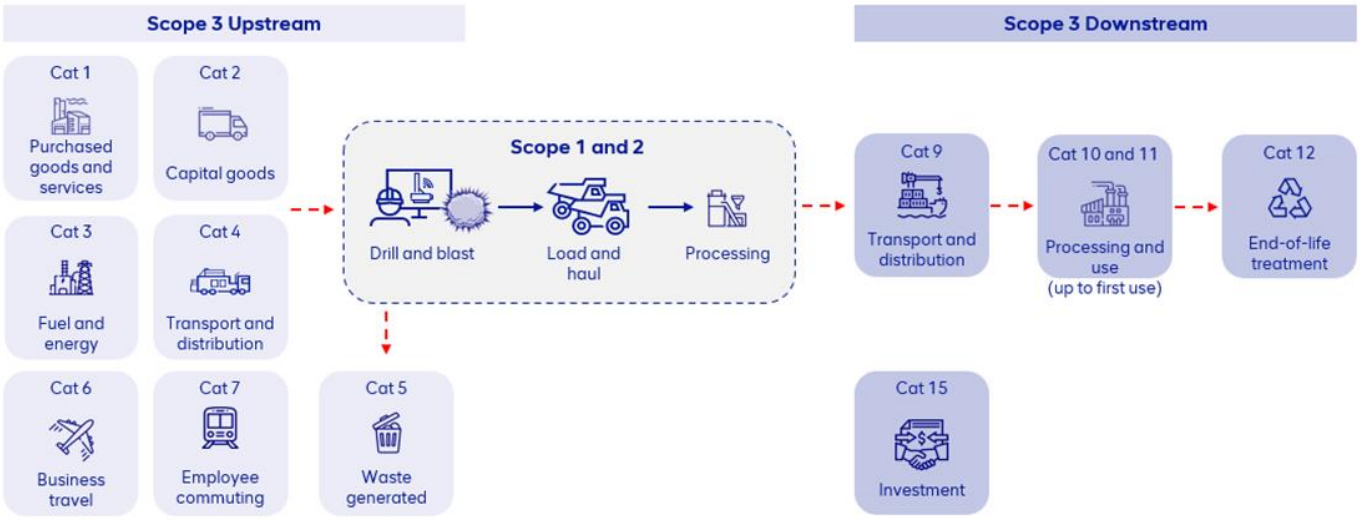
Operations in which Anglo American is not the majority stakeholder are also recognised and accounted for under category 15.

Scope 3 reporting boundary

This Methodology report is used to calculate Anglo American's Scope 3 emissions in line with the requirements of the GHG Protocol. All 15 categories have been considered and the approach to the Scope 3 emissions inventory assessment adheres to the minimum requirements of the GHG Protocol, with exclusions being highlighted in each section in this report.

Calculations under categories 10 and 11 for processing and use of sold products are accounted for up to first use only.

Anglo American does not have emissions associated with categories 8 and 13.



* This is an overview of our metals value chain to demonstrate processing steps and category mapping. Scope 3 categories identified as immaterial and irrelevant to our Scope 3 inventory are not shown. Scopes 1 and 2 emissions sources shown are not exhaustive and are illustrative for some of the typical operational emission sources found at the mine site.

Organisational boundary and consolidation approach

Anglo American's organisational boundary for carbon emissions reporting, is defined in terms of operational control. This informs its accounting and reporting for non-financial performance matters, including Scope 1 and 2 emissions and has been consistently applied to our Scope 3 accounting and reporting approach. Therefore, Anglo American's Scope 3 reporting reflects the value chain emissions for operations, companies, subsidiaries, and joint ventures over which we have operational control reported in Scope 3 Categories 1 to 14, and the emissions from operations and value chains where we do not have operational control as Scope 3 Category 15.

All assets and operations under Anglo American's operational control have been fully accounted for, rather than accounting for Anglo American's financial or equity share in these assets or operations.

To ensure completeness, and as per the recommendations of the GHG Protocol relating to material investments held by the reporting company, the Scope 3 accounting approach includes the Scope 1, 2 and 3 emissions of non-managed investments and joint ventures where these are material and quantifiable, based on equity holdings in these.

The De Beers Group joint ventures are all reported equivalently and in full; including for Namdeb and Debswana operations as though these joint ventures were owned and managed for the purpose of Scope 3 emissions calculation.

Third party material

Embedded emissions associated with the purchasing and trading of 3rd party material is done by calculating an emissions proxy for the appropriate categories. Anglo American takes a 5% margin of these emissions.

Materiality

Materiality refers to individual or an accumulation of errors or exclusions that can significantly affect the GHG inventory and potentially influence decision-making. To understand materiality, a materiality threshold is established as an acceptable percentage difference between Anglo American's GHG inventory and a verifier's belief of what the company's emissions would be if all excluded sources were accounted for. This threshold is set at 5%.

Assurance

Scope 3 assessments receive quality assurance through internal review and are also independently assured by a reputable third-party sustainability reporting and assurance provider. Any material findings are addressed within the reporting cycle. Recommendations for continued enhancement are incorporated or addressed in subsequent reporting periods.

Methodology Details

Anglo American calculates its Scope 3 emissions across all 15 categories as set out below. Of the 15 categories reported, only categories 10, 11 and 15 are considered material. Details for calculations under categories 10 and 11 are expanded upon in sections 5.2 and 5.3 below.

Methodology overview for categories below materiality threshold

	Category	Calculation boundary	Calculation methodology	Data sources
1	Purchased Good and Services	Cradle-to-gate	Operational expenditure (OPEX) in US dollars is collated and categorised. Spend-based emissions factors are applied to spend data to attribute an emissions rate.	Spend-based data for OPEX from a total extract of Anglo American Group's procurement data for the year. CEDA by Watershed EEIO emissions factors
2	Capital Goods	Cradle-to-gate	Capital expenditure (CAPEX) in US dollars is collated and categorised. Spend-based emissions factors are applied to spend data to attribute an emissions rate.	Spend-based data for CAPEX from a total extract of Anglo American Group's procurement data for the year. CEDA by Watershed EEIO emissions factors

	Category	Calculation boundary	Calculation methodology	Data sources
3	Fuel and Energy-Related Activities	Cradle-to-gate	Volumes or masses of each fuel purchased by Anglo American operations in reporting period are multiplied by the corresponding well-to-tank emissions factors to derive the total attributable upstream emissions for each fuel or energy type. Renewable energy generated on site has no emissions associated with it, however, purchased renewable energy generated off site, will have emissions associated with the transfer and distribution of the energy to the Anglo American site.	Volumes for liquid and gaseous fuels; mass for solid fuels; and MWh for electricity purchased. Transmission and distribution (T&D) losses and well-to-tank emissions sourced from BEIS and the IEA.
4	Upstream Transportation and Distribution	Scope 1 and 2 emissions of providers	Anglo American's logistical expenditure is classified as Category 4 including road freight, rail freight and warehousing. The data was sourced from Anglo American Group Procurement. Freighting and warehousing. An assumption has been made that suppliers of logistics and distribution services produce emissions in line with industry average estimates.	Air freight, road freight and warehousing spend in USD collated in the Anglo American procurement model. CEDA by Watershed EEIO emissions factors.
5	Waste Generated in Operations	Scope 1 and 2 emissions of providers	Activity data in the form of mass (tonnes) per waste type and waste fate/ treatment of waste recorded by Business Unit. Industry average emissions factors are applied to activity data. Bulk mining wastes not included, as such wastes are handled on-site and are included in Anglo American's Scope 1 and 2 footprints.	Activity data has been sourced from Anglo American's data collection process. Industry average waste disposal factors derived from BEIS for waste disposal of various waste types.
6	Business Travel	Scope 1 and 2 emissions of providers, including those associated with accommodation	Emissions data for flights is provided by Anglo American's travel agent which is used Group wide for all business travel bookings. Spend-based method is applied to calculate emissions for hotel stays and car hire.	Rail and air travel data provided by travel agent. EEIO emissions factors used to calculate hotel stay and car hire emissions.
7	Employee Travel	Scope 1 and 2 emissions that occur during use of transport and well-to-tank emissions associated with the fuel used in employee commuting	Estimates of daily distances travelled by employees used as activity data. Distances are multiplied by industry average emissions factors for each vehicle, corresponding to the number of trips undertaken. For bus and minibus trips to operations, it has been assumed that employees travel 365 days per year. For other sites, it has been assumed that employees make return trips for 230 days per year.	Industry average travel emissions factors sourced from BEIS and IEA.

	Category	Calculation boundary	Calculation methodology	Data sources
8	Upstream Leased Assets	n/a	n/a	n/a
9	Downstream Transportation and Distribution	Scope 1 and 2 emissions of providers	The emissions associated with bulk shipping is derived from information sourced from a third-party provider. Air freight expenditure has been included in Category 9 for Diamonds and PGM operations as these commodities are considered as precious minerals that are often transported via air freight to their destinations. This category includes an estimate for the emissions from helicopter transportation of PGM product leaving the refinery, as well as the associated flight information of the product leaving South Africa from O.R Tambo International Airport. For all other transport, estimates are made based on distance to end customer, weight of goods moved and mode of transport.	Shipping emissions calculated according to EN 16258 standard and uses the AR4 GWP metrics for methane and nitric oxide emissions. The source of emissions factors applied for air freight and helicopters transportation is BEIS.
10	Processing of Sold Product	Scope 1 and 2 emissions of downstream companies up to first use	See full details in section below.	
11	Use of Sold Products	Scope 1 and 2 emissions of downstream companies up to first use	See full details in section below.	
12	End-of-life treatment of sold products	End of life disposal	Global recycling rates applied to each product category, based on international standards and industry benchmarks. Landfilling used for non-recycled products to quantify emissions from landfill disposal. Closed-loop recycling applied to recycled products to capture the lower emissions impact of reusing materials within the same lifecycle.	Combined product volume data with recycling rates and emissions factors specific to each product category.
13	Downstream Leased Assets	n/a	n/a	n/a
14	Franchises	n/a	n/a	n/a

	Category	Calculation boundary	Calculation methodology	Data sources
15	Investments	Proportional Scope 1, 2 and 3 emissions from equity investments	Financial exposure considered in terms of the equity holding that Anglo American has in the joint venture operation. Where primary Scope 1 and Scope 2 emissions data for non-managed operations is available these are multiplied by the percentage equity held by the company to yield emissions attributable to Investments. Where no reported Scope 1 and Scope 2 emissions are found through outreach or in research, an emissions proxy was applied, computed as available emissions intensity data from a company producing the same material as the operation in question to yield a useable emissions per unit produced. This emissions factor was multiplied by the mass of material produced by the company's operation in question. For Scope 3 for non-managed operations, the emissions intensities for the owned and managed operations are used as proxies to determine these extended boundary emissions of the non-managed investments, wherever possible. These Scope 3 emissions proxies are then multiplied by the volume of product sold in the reporting period by the non-managed asset.	Emissions data of jointly owned operations or an appropriate proxy.

Category 10: Processing of sold product

Category description
Processing of intermediate products sold in the reporting year by downstream companies.

Methodology and assumptions
Iron Ore: Iron Ore sintering and pelletisation, blast furnace to basic oxygen furnace (BF-BOF), and direct reduction to electric arc furnace (DRI-EAF) emissions factors are collected by Anglo American internal experts (using customer provided information) and the CRU Group's Emissions Analysis Tool, wherever possible.

Iron ore preparation processes, pelletising and sintering, are applied to the pellet feed and fines volumes, respectively. Lump volumes sold do not require preparation prior to feed into the furnaces and are assumed to have no emissions in the preparation phase.

Iron Ore inputs per unit crude steel outputs are collected for each customer facility to enable mass-in, mass-out conversions. This is possible where both the customer was known, and customer performance data is available.

Emissions factors provided by customers are converted from a per tonne of crude steel basis to a per tonne of iron ore basis. 100% of emissions arising from steelmaking as calculated above are allocated to category 10 emissions for the iron ore businesses.

Where data on the specific customers and facilities are not available (whether own mined product or 3rd party traded product), a regional average proxy is used based on the customer sample data received.

Copper and Molybdenum: Activity data is based on global industry averages.

Nickel: Ferronickel volumes from Barro Alto and Codemin sold are multiplied against a stainless steel manufacturing emissions factor attributed to the percentage of Nickel in stainless steel, as it is assumed that all this product is used for that end use.

PGM: Where end customer is known, activity data is based on sales direct to customer. Where end customer is unknown, assumptions are made on the end use of sold PGMs based on global industry averages.

Tolled material was calculated to have an associated embedded processing emission. An emissions proxy was

developed using the processing intensity for Anglo American downstream emissions for own-mined PGMs. A 5% margin was applied.

3rd Party Iron Ore, Steelmaking Coal, and Copper: the 3rd Party product volumes traded in the reporting year are computed using the same methodologies as the own-mined product volumes, but distinctly. An Economic Benefit Margin on these 3rd Party traded product volumes was used across all relevant Scope 3 categories to determine the Scope 3 emissions figure in the inventory.

Diamonds: De Beers data for the prior reporting year is utilised.

Activity data source
Activity data is obtained from Anglo American Marketing in the form of sales data for the reporting period.

Emissions data source
Iron Ore: Emissions factors are generated through engagement with customers. Where there were none, industry averages were used.

Nickel: Emissions factors for Nickel were developed by multiplying the steelmaking emissions per tonne of steel produced (World Steel) by the percentage of nickel content in steel. The latter was developed by compiling a weighted average of nickel content in steel from published by the Nickel Institute.

Other commodities: Global average emissions factors utilised for specific product value chains.

Exclusions
Secondary processing emissions in the manufacturing of steel and processes downstream of this are not included in the reporting boundary.

Category 11: Use of sold products

Category description
End use of goods and services sold by the company in the reporting year.

Methodology and assumptions
Steelmaking Coal: The steelmaking Scope 3 emissions for Steelmaking Coal are captured in Category 11. Emissions calculated based on the calorific content of coal produced and the emissions associated with its combustion, regardless of the customer.

Steelmaking Coal Methane Gas Sales: the volume of methane gas generated and sold at the Steelmaking Coal operations and transferred to power generation companies who combust the methane have been included. The volume of methane sold is multiplied by the combustion factor for methane gas to yield the total emissions rate for these volumes.

Steelmaking Coal - Thermal Coal: Included for the Dawson produced thermal coal, only the use phase. The application of Thermal Coal to other uses is considered marginal.

PGM: For own-mined materials, reported production is apportioned to the end-use categories representative of the markets into which Anglo American sells. Emissions factors have been developed for jewellery and auto-catalyst manufacturing from academic publications concerning manufacturing processes and concentration. Only industrial end-use applications are considered to generate material emissions for PGMs and therefore only industrial applications are calculated under Category 11.

3rd Party Steelmaking Coal, Thermal Coal and PGMs: Emissions from 3rd Party product volumes traded in the reporting year are computed using the same methodologies as the own-mined product volumes. 5% of the calculated emissions are accounted for, reflecting the economic benefit obtained from these products.

Diamonds: De Beers data for the prior reporting year is utilised.

Activity data source
Activity data is derived from Anglo American sales.

Emissions data source
Steelmaking Coal: Calorific content of coal produced is multiplied by an emissions factor for the combustion of coking coal sourced from BEIS.

Diamonds: De Beers data for the prior reporting year is utilised.

Exclusions
All indirect use-phase emissions have been excluded from consideration in these results. Indirect use phase estimations would need to be based on the mass of the commodities embedded in final products and assumptions concerning the use profiles of those products, which would be based upon unsupported assumptions and estimations with the number of variables to consider for each commodity too great to quantify with reasonable certainty. As these final product constituent elements become more integrated with other materials and systems, attribution of emissions to base products is anticipated to diminish commensurately with this diffusion.