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Market Announcements Office
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ANZ Financed Emissions Calculation Methodology

Australia and New Zealand Banking Group Limited (ANZ) today released its Financed Emissions Calculation Methodology.

It has been approved for distribution by ANZ's Continuous Disclosure Committee.

Yours faithfully

Simon Pordage
Company Secretary
Australia and New Zealand Banking Group Limited

ANZ FINANCED EMISSIONS CALCULATION METHODOLOGY

November 2022



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1. Introduction

Banks have an important role to play in supporting the transition of the real economy to net zero emissions. This is acknowledged in Article 2.1(c) of the Paris Agreement which makes clear the need for finance flows to be made consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.

To help guide our efforts in steering financial flows towards lower greenhouse gas emissions, ANZ has joined the Net Zero Banking Alliance (NZBA) – an initiative bringing together a global group of banks that are committed to aligning their lending and investment portfolios with net zero emissions by 2050.

As a first step, ANZ is required to set intermediate targets for 2030 (or sooner) that support limiting global warming to 1.5°C by the end of the century. ANZ has elected to set these targets on a sector-specific basis, that at this stage, cover the following six carbon-intensive sectors of the economy:

- Oil and Gas
- Power Generation
- Aluminium
- Cement
- Steel; and
- Commercial Real Estate

The purpose of this document is to outline the methodologies ANZ has used to establish emissions baselines and to annually measure and report the emissions profile of our lending portfolios. It also describes our approach in setting 2030 targets for each of the above sectors and the scenarios we have benchmarked these targets against.

2. Oil and Gas

2.1 Overview

The 2030 target we have set for our oil and gas portfolio is based on absolute emissions (26% reduction on a 2020 baseline). It covers the Scope 1, 2 and 3 (product use) emissions of our customers involved in oil and gas exploration and production (upstream) as well as integrated oil and gas producers that operate across the oil and gas value chain. Customers included in the metric each year are those who we have more than \$10m exposure at default (EAD) at the end of our financial reporting year (September 30).¹

Our choice of an absolute emissions reduction target recognises that there are limited opportunities to fully reduce the carbon intensity of fossil fuel products. While we recognise that many energy companies are diversifying their businesses into cleaner energy sources – such as renewable electricity, hydrogen and biofuels – the climate benefits of these fuels will be captured in emissions intensity metrics we develop for other sectors such as power generation, transport and other industrial sectors that are the final users of these fuels.

Scope 3 emissions from the burning of oil and gas products account for the large majority of emissions for oil and gas companies across their value chain (typically 80-90%). ANZ's approach to account for these emissions is to base it on our customers' equity-based production of oil and gas (at the point of extraction) that is available for sale.

This approach was preferred for multiple reasons:

01. Avoiding double-counting of emissions:

Oil and gas can only be extracted from the environment once and the wide availability of company production data that is based on the 'working-interest method';² makes it a relatively straight-forward exercise to accurately assess the downstream emissions that would result from the burning of the embodied carbon.³ Given that an oil and gas company can often produce significantly different quantities of hydrocarbon products than it sells, this approach also reduces the risk of double and even triple counting of emissions.

02. Lack of available sales data: There is often a lack of traceability in the sales of oil and gas products across intra and inter-organisational boundaries. This makes it hard for financial institutions to account for the downstream emissions resulting from the use of sold energy products. The long-established approach and wide availability of equity-based production reporting makes it a preferable source of data to account for the Scope 3 emissions of our oil and gas customers.

03. Aligns with the findings of 1.5°C pathways:

Accounting for our customers Scope 3 emissions at the point of production was deemed by ANZ to provide a better insight on how our lending is supporting the achievement of a real-world reduction in oil and gas production and associated emissions.

The key design choices we used in calculating our absolute emission reduction target for our oil and gas financing activities are summarised in Table 2.1.

Table 2.1 – Key design choices in calculating oil and gas target

Activities Included	<ul style="list-style-type: none"> • Exploration and production (includes dedicated upstream companies, and LNG producers) • Integrated oil and gas producers
Company Emissions Included	<ul style="list-style-type: none"> • Scopes 1, 2 and 3 (Category 11, product use)
Metric	<ul style="list-style-type: none"> • Absolute emissions (in million tonnes) (Mt)
Financing Activities Included	<ul style="list-style-type: none"> • Based on Exposure at Default.⁴ This reflects total committed loans (drawn plus undrawn amounts) and all trade finance and markets products
Attribution Approach	<ul style="list-style-type: none"> • ANZ financing to customers as a proportion of customer value. Customer values are based on the following definitions: <ul style="list-style-type: none"> – Private company: Book value of debt and equity – Public company: Enterprise value including cash (EVIC)
Benchmarking Scenario	<ul style="list-style-type: none"> • International Energy Agency (IEA) Net Zero Emissions by 2050 World Scenario
Key External Data Sources	<ul style="list-style-type: none"> • Customer disclosures • Wood Mackenzie • Rystad • International Energy Agency

The IEA's Net Zero by 2050 Report highlights multiple opportunities for the oil and gas sector to reduce emissions across the value chain. In relation to their own operations, a top priority for oil and gas companies is to minimise methane leaks through a focus on leak detection and repair. Other important steps include avoidance of non-emergency flaring and venting along with significant electrification of upstream operations.

In relation to Scope 3 emissions, a reduction will depend on the combined actions of businesses, governments and consumers.

The main purpose of setting our target to achieve a 26% absolute reduction in financed emissions for the oil and gas sector is to ensure that we remain accountable to playing our role in supporting customers that are committed to reducing their operational emissions and develop public transition plans and diversification strategies. To achieve our target, we will take a total portfolio view, rather than seeking absolute uniformity in outcomes across all customers.

¹. Cumulative customer exposures below this threshold represent a very small part of our overall financing activities in the oil and gas sector (<0.1%), meaning that their exclusion does not materially affect our financed emissions calculations. ². Working interest refers to a company's percentage interest in an asset of project that normally determines what percentage of costs and revenues that the company pays or receives from the asset or project. ³. Assumes full stoichiometric combustion of the extracted oil and gas that is available for sale, even though a small component is used for non-energy purposes. ⁴. For exposures to oil and gas customers that exceed \$AU10 million (EAD).

2.2 Activities and Emissions in Scope

With the majority of emissions in the oil and gas value chain associated with the downstream use of products, we sought to ensure that our method was capturing all customers⁵ with an equity stake in upstream production – the point at which oil and gas enters the world economy. We did this to ensure we were linking Scope 3 emissions (from product use) to the original producer and to avoid double counting of emissions as much as possible.

To identify customers with ownership stakes in upstream production, we used the Australian and New Zealand Standard Industrial Classification (ANZSIC) for oil and gas extraction. We also took into consideration projects involving the exploration and production of oil and gas, principally LNG projects we directly finance. Accordingly, the customers included within the scope of our target are dedicated upstream producers as well as ‘integrated producers’ that are involved in activities across the oil and gas value chain, i.e. upstream, midstream and downstream.

We have decided at this stage to exclude dedicated refinery operators from the boundary of our oil and gas target. With only two remaining refineries operating across our home markets of Australia and New Zealand, and with only small exposures to dedicated oil refiners in other markets, we concluded that this was unlikely to make a material contribution to our financed emissions from the sector. The refinery operations of our integrated oil and gas customers are captured, however.

The emissions included in the target are the Scope 1 and 2 emissions of our customers’ own operations. This includes non-CO₂ gases such as methane. We also consider the downstream Scope 3 emissions associated with the use of extracted oil and gas where it is assumed that it is all fully combusted without any use of carbon capture and storage technologies.

Our methodology does not currently consider the use of any offsets that are used by customers to reduce their emissions. We are open to recognising the use of offsets in future reporting periods given that it is a recognised form of abatement in the Paris Agreement and that many of our oil and gas customers are proposing to use them to achieve their own emission reduction targets. The NZBA also supports their use, but only where there are limited technologically or financially viable alternatives to eliminate emissions and the offsets are of the highest quality.

2.3 Data used to calculate customer emissions

To maximise the quality of the data we used to calculate our financed emissions, ANZ was guided by the *Global GHG Accounting and Reporting Standard for the Financial Industry* published by the Partnership for Carbon Accounting Financials (PCAF).⁶

Scope 1 and 2 emissions

For Scope 1 and 2 emissions, we prioritised the use of company reported emissions based on the equity accounting approach. If equity-based emissions were not reported, we relied on company disclosure of emissions based on the operational control consolidation approach.

We prefer to use our customers’ equity-reported Scope 1 and 2 emissions because many companies in the oil and gas industry often have small, non-operating stakes in projects that would otherwise be accounted as zero emissions if we had chosen an operational control consolidation approach. While these companies may not be the operator of the projects, we consider that their equity in oil and gas projects still provides them with a degree of influence in shaping policies and initiatives aimed at mitigating the Scope 1 & 2 emissions emanating from the projects.

Where our customers did not report any Scope 1 & 2 emissions data, we relied on detailed estimates provided by specialist third party data vendors – Wood Mackenzie and Rystad, which use proprietary models to estimate emissions right down to the individual field level. This covers emissions from upstream activities including drilling, production and processing (including LNG liquefaction) along with fugitive emissions associated with CO₂ venting, flaring and methane losses.

Scope 3 emissions

Although many of our customers are now reporting their Scope 3 emissions from the use of their sold energy products, we found that these customers are applying boundaries inconsistently. In some cases, this involved companies factoring in external purchases and sales of energy which introduces the risk of double counting of emissions across our customer base. Accordingly, we decided against relying on our customers’ disclosures of Scope 3 “use of product” emissions.

Instead, ANZ uses the net production data reported in our customers’ mainstream financial reports as the preferred source of information to calculate the downstream Scope 3 emissions associated with the final use of their products (Category 11). Where possible, we based this on the production available for sale given that oil and gas companies use a portion of the energy they produce for use in their own operations – which accordingly would be captured as a source of Scope 1 emissions by our customers.

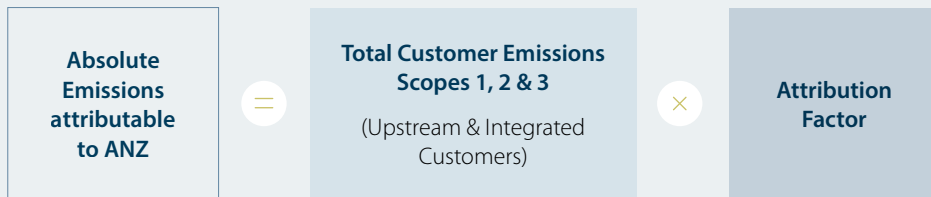
By estimating our customers’ ‘Scope 3’ use of product’ emissions based on their equity production, it ensures that we are more accurately measuring each customer’s emissions resulting from the energy that they introduce into the world’s economy. The experience that our oil and gas customers have in providing regular market updates on their production and reserves means that this is a credible source of information on which to base our Scope 3 emissions calculations.

To convert our customers’ production data into estimated emissions, we use mass and volumetric conversion factors made available by the American Petroleum Institute (API).⁷ We then applied emission factors from the Intergovernmental Panel on Climate Change (IPCC)⁸ to estimate the carbon dioxide emissions resulting from the assumed full stoichiometric combustion of the extracted oil and gas. We acknowledge that this is likely to present an over-estimation of our customers’ downstream emissions given that a proportion of their oil and gas production is used for non-energy purposes. Some of our customers also apply this approach in calculating their own emissions.

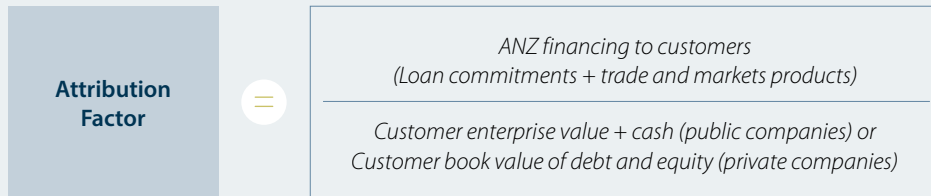
⁵ Oil and gas customers where our exposures exceed \$AU10 million (EAD). ⁶ Refer to p39-40 and the Annex of the PCAF standard that is available for download [here](#). ⁷ American Petroleum Institute, *Compendium of Greenhouse Gas Emissions Methodologies for the Natural Gas and Oil Industry*, November 2021. ⁸ Intergovernmental Panel on Climate Change (IPCC), 2006 IPCC Guidelines for National Greenhouse Gas Inventories.

> **2.4 Calculation of absolute financed emissions**

To determine what portion of our customer’s emissions are attributable to ANZ’s financing activities, we multiply each of our customers’ emissions by an attribution factor as per the formula below:



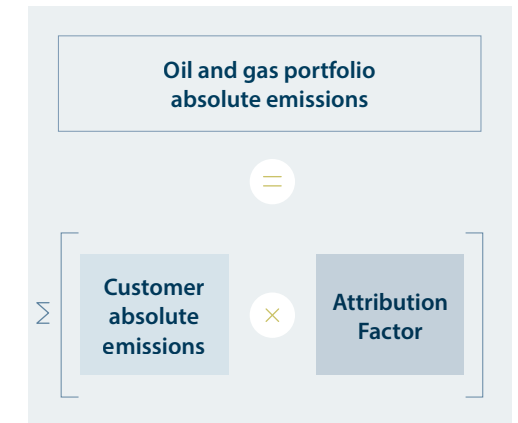
The attribution factor is calculated by dividing ANZ’s financing by our customer’s value as shown in the formula below:



For publicly traded companies, customer value is enterprise value including cash (EVIC). For privately held companies, customer value is the book value of debt plus equity. This approach reflects the relative weight of our financing within a customer’s capital structure.

ANZ has taken a conservative approach to the numerator in the attribution factor and has included the total committed loans we have issued to oil and gas customers in addition to the full value of trade and markets products (expressed in Exposure at Default terms). This is a departure from the PCAF recommended approach, which only recommends including the outstanding amount of loans and investments. While this approach means that we are attributed a higher proportion of our customers’ emissions, we consider this provides a more accurate representation of our support to oil and gas companies and the transition risks that we are potentially exposed to. By including all products, we also believe it provides a better insight into how we are supporting our customers to reduce their emissions across their full value chain. The choice of the committed loan amount, rather than the outstanding amount, also removes the risk of volatility in customer drawdowns that may impact the achievement of our target.

To calculate the financed emissions of our full portfolio, we aggregate the financed emissions of individual customers in accordance with the following formula:



ANZ remains open to adjusting our approach to calculating financed emissions as the quality and availability of data improves and as standards continue to evolve. Re-baselining may also need to occur as a result of proposed changes to the way Exposure at Default is calculated for certain types of products. These changes are being driven by the Australian Prudential Regulatory Authority and scheduled for introduction in 2023.⁹

⁹ APRA is implementing a new regulatory capital framework for Australian banks that will be effective from 1 January 2023. This will result in changes in the credit risk capital that ANZ is required to set aside in respect of different products and as a result, will impact the way Exposure at Default is calculated. This is likely to result in restatements of our disclosures from previous years, including those relating to coal and other segment specific metrics.

2.5 Climate Scenario and Target

Our 2030 target is aligned with the IEA's Net Zero Emissions by 2050 (NZE 2050) Scenario that was published in 2021. This scenario satisfies guidance issued by the Net Zero Banking Alliance that banks should use scenarios produced from credible and well-recognised sources that align with no/low overshoot 1.5°C transition pathways.

There were several reasons we chose 2020 as the baseline for our 2030 oil and gas sector target. First, it aligns with the baseline we set for our power generation metric and thereby provides a matching 10-year timeframe for us to demonstrate the extent to which our lending is supporting the transition of the energy sector. Secondly, as our 2020 baseline predominantly relies on company emissions and production data from the 2019 calendar year, it also provides more representative data than 2020, during which global energy markets were significantly distorted because of COVID-19. And lastly, with the NZE 2050 Scenario providing emissions and production data for the 2019 calendar year, it also provided a clear transition pathway out to 2030 that helped determine the ambition of our target.

There were several factors we considered in arriving at our final target of a 26% reduction in absolute emissions from our oil and gas customers. The biggest factor is the differentiated rates of emissions reductions that the NZE 2050 Scenario shows are required for our customers' operational emissions (Scope 1 & 2), and those associated with the downstream use of the energy that our oil and gas customers produce and sell

(Scope 3). Because of this, we sought to develop a clear understanding of our customers' absolute emissions across the various emissions scopes to ensure that we could calculate an appropriately weighted emissions reduction target for our full portfolio covering all emissions scopes.

For Scope 1 emissions we made the conservative assumption after reviewing our customers' reported emissions that methane was responsible for 10% of their reported totals (on a carbon dioxide equivalent basis). Under the IEA's NZE 2050 Scenario, methane emissions from the fossil fuel sector fall by 75%¹⁰ between 2020 and 2030 which was the same reduction we applied in formulating our target. For the remaining 90% of Scope 1 emissions – which are mostly CO₂ emissions associated with upstream activities as well as refining activities for integrated producers – the NZE 2050 Scenario assumes these emissions fall by 53%¹¹ between 2019 and 2030 which is the same reduction factored into our oil and gas sector target.

Scope 2 emissions are typically a small part of oil and gas company emissions given the remoteness of their upstream operations means that they are often not connected to an electricity grid. The electricity that oil and gas companies use in their operations is mostly self-produced, meaning that the resulting emissions are counted as a Scope 1 emission. Nevertheless, we have captured our customers' Scope 2 emissions in the boundary of the target and have factored in a 58%¹² reduction over the period 2019-2030. This aligns with the reduction in CO₂ emissions outlined in the IEAs NZE 2050 Scenario for the electricity and heat sectors.

The Scope 3 emissions, associated with the downstream use of the energy that our oil and gas customers produce and sell, are typically responsible for around 80-90% of their value chain emissions. It follows that this source of emissions will have the largest influence over our 2030 target. Under the NZE 2050 Scenario, emissions from the final consumption of gas (industry, transport, and buildings) and in the electricity and heat sector reduce by a combined 17% between 2019 and 2030. For oil it is 35%, which we applied to our customers' production of crude oil, synthetic oil, bitumen, condensate, natural gas liquids and liquefied petroleum gases.

The result after applying these reductions to the various parts of our 2020 financed emissions portfolio is the need for a 26% reduction in absolute financed emissions that we will aim to achieve by 2030. It is important to note however that because the financed emissions figures we report in 2030 will be based mostly on our customer's reported information for the 2029 calendar year, that our 26% target is based on what is required over a 10-year trajectory towards the 2030 targets rather than the 11-year timeframe that is modelled in the NZE 2050 scenario (2019-2030) (see target calculation approach below).

Emissions source	Percentage of total ANZ 2020 financed emissions (CO ₂ -e) (A)	IEA NZE 2050 Reduction Pathway (2019-2030) (B)	Contribution to ANZ 2030 reduction target (C) (C=A*B*10/11)
Scope 1 – Operational			
CO ₂ -related emissions	9.5%	-53.4%	-4.6%
Methane-related emissions	1.1%	-75%	-0.8%
Scope 2 – Operational			
	0.9%	-57.9%	-0.5%
Scope 3 – Use of products			
Liquids	39.2%	-34.6%	-12.3%
Gas	49.4%	-17.2%	-7.7%
Weighted average emissions reduction			$\Sigma C = -26\%$

¹⁰. International Energy Agency (2021) *Net Zero by 2050: A Roadmap for the Global Energy Sector* p14. ¹¹. Ibid p199. The 53% reduction figure is the difference between CO₂ Emissions for the 'Other Energy Sector' between 2019 and 2030 which captures *inter alia* the own use of energy in oil and gas extraction as well as energy losses in petroleum refineries and gas transformation and liquefaction. ¹². Ibid p199.

2.6 Complementary oil and gas metrics – portfolio and physical emissions intensity

In addition to reporting annual performance against our absolute emissions target, the guidelines of the NZBA make clear the need for signatory banks to report the emissions profile of our oil and gas portfolio using two additional metrics:

- > Portfolio wide emissions intensity; and
- > Sector-specific emissions intensity

Portfolio wide emissions intensity metric:

ANZ has chosen to report this as kilograms of CO₂-e per dollar lent. This is calculated by dividing the absolute financed emissions (calculated in accordance with the methodology outlined in Section 2.4 above) by the total financing to customers that were considered within the boundary of the metric.

Sector-specific emissions intensity metric:

ANZ has chosen to report this as kilograms of CO₂-e per gigajoule of energy produced (and available for sale). The numerator of this metric is again the absolute emissions figure calculated in accordance with the methodology outlined in Section 2.4. The denominator is the total combined oil and gas production that is attributed to ANZ's finance using the same attribution factors outlined in Section 2.4. The embodied energy in our customers' oil and gas products was calculated by using mass and volumetric conversion factors made available by the American Petroleum Institute (API)¹³ and based on the net calorific value.

13. American Petroleum Institute, *Compendium of Greenhouse Gas Emissions Methodologies for the Natural Gas and Oil Industry*, November 2021.

3. Power Generation

3.1 Overview

ANZ set a 2030 target to reduce the emissions intensity of our power generation portfolio by 50% at the end of 2021 (off an 2020 baseline). The metric we use to track the carbon intensity of our portfolio reflects the debt weighted carbon intensity of electricity generation (i.e. carbon emissions per unit of generation) for Institutional customers whose main business activity is the generation of power. Customers included in the metric each year are those to which we have more than \$1m exposure at default (EAD) at the end of our financial reporting year (September 30).¹⁴

The target covers the Scope 1 emissions from generation assets either owned by our customers or coming under their operational control. It does not currently capture the emissions from generation assets that some of our customers may use exclusively in their own operations, such as some of our mining customers. It also does not capture the electricity that some of our power generation customers may purchase from third-party generators either as part of a power purchase agreement or on the spot market. This decision was made to avoid the risk of double counting emissions should ANZ also have a customer relationship with the third-party generator.

Our choice of an emissions intensity reduction target recognises that 1.5°C aligned scenarios point to the need for substantially more electricity to be generated in 2050 than is generated today. What is critical is for most of this electricity to be

supplied from renewables. The IEA's NZE 2050 scenario¹⁵ shows renewables moving from around 29% of total global generation in 2020 to 88% of generation by 2050. Renewable electricity generation grows eightfold between 2020 and 2050. At the same time, generation from unabated fossil fuels—responsible for around 61% of global electricity generation in 2020—shrinks to negligible levels.

The key design choices we used in calculating our emissions intensity reduction target for our power generation financing activities are summarised in Table 3.1.

The IEA's Net Zero by 2050 Report highlights that the achievement of net zero emissions requires a transformation of the electricity sector. An emissions intensity metric and target for our power generation financing activities will help us track the extent to which we are supporting the necessary transition of the world's electricity grid, from one that is dominated by fossil fuels to one that is predominantly renewables.

The scale of this challenge is immense. Coal was still responsible for 53% of Australia's total power generation during 2020/21¹⁶ and sudden withdrawals of coal-fired generation capacity risks both energy security and affordability, along with the jobs of thousands of coal industry workers in the regions that support them.

While significant transformation of Australia's electricity industry still lies ahead, many of our customers have already taken significant steps to

Table 3.1 – Key design choices in calculating power generation target

Activities Included	<ul style="list-style-type: none"> Companies that own or operate one or more electricity generation facilities that dispatch electricity into transmission grids
Company Emissions Included	<ul style="list-style-type: none"> Scope 1 (from electricity generation activities only)
Metric	<ul style="list-style-type: none"> Emissions intensity of electricity generation (kgCO₂-e/MWh)
Financing Activities Included	<ul style="list-style-type: none"> Exposure at Default. This reflects total committed loans (drawn plus undrawn amounts) and all trade and market-based products
Attribution Approach	<ul style="list-style-type: none"> Portfolio-weighted approach (measures ANZ's financing to power generation customers as a proportion of ANZ's total financing to the sector)
Benchmarking Scenario	<ul style="list-style-type: none"> International Energy Agency (IEA) Net Zero Emissions by 2050 World Scenario
Key External Data Sources	<ul style="list-style-type: none"> Customer disclosures Australian Clean Energy Regulator International Energy Agency Asset Resolution

reduce their emissions. Over the decade 2011-2021, Australia's annual electricity sector emissions have reduced by around 40 million tonnes.¹⁷ But with the electricity sector playing a key role in decarbonising other sectors of the economy like buildings, transport, and industry, we recognise that the electricity sector needs to be the first to achieve net zero emissions, and that banks like ANZ have a key role to play in supporting the achievement of that ambition in an orderly and socially responsible way.

As more coal capacity continues to be removed from Australia's electricity grids and replaced by cleaner sources, progress towards our 2030 target is unlikely to be linear. However, our target to halve the emissions intensity of our power generation financing activities by 2030, affirms our commitment to playing our part in supporting the clean electrification of the world's energy supply.

¹⁴. It is estimated that cumulative customer exposures below this threshold represent a very small part of our overall financing activities in the power generation sector (<0.1%) that are linked to actual generation assets. ¹⁵. International Energy Agency 2021, Net Zero by 2050: A Roadmap for the Global Energy Sector. ¹⁶. Australian Energy Update 2022, Table O: Australian electricity generation, by state and territory, by fuel type, physical units. ¹⁷. National Greenhouse Gas Inventory Quarterly Update: March 2022.

3.2 Activities and Emissions in Scope

ANZ believes that an emissions intensity target (kgCO₂-e/MWh generated) is the best way to demonstrate how our finance is contributing to the clean electrification of the world's energy supply. While increases in support to existing customers to transition their portfolios to cleaner generation sources may translate into short to medium term increases in emissions intensity of our financing activities, we consider that this is the right step for us to take to support real-world reductions in emissions over the longer term.

To identify customers with ownership stakes in power generation assets, we used the ANZSIC code for power generation. This captures corporate financing to customers whose main business activity is power generation as well as project financing of power generation assets. As several of our oil and gas customers are looking to clean energy generation projects as a way of diversifying their traditional hydrocarbon businesses, we also include these directly financed projects within the boundary of our target.¹⁸

The emissions included in the target are the Scope 1 emissions from the power generation assets that are owned by our customers or that come under their operational control. While most of these Scope 1 emissions are carbon dioxide, it also includes a small amount of methane and nitrous oxide emissions as well. For the denominator of the emissions intensity target, we have used gross

electricity generation of our customers, to ensure that we are able to benchmark on a like-for-like basis with the IEA's NZE 2050 Scenario.

Our methodology will not consider the use of any offsets that are used by power generation customers to reduce their emissions. This is because the low costs and maturity of an array of renewable technologies means that there are both technologically and financially viable alternatives to eliminate emissions.

3.3 Data used to calculate customer emissions

To maximise the quality of the data we used to calculate our financed emissions, ANZ was guided by the *Global GHG Accounting and Reporting Standard for the Financial Industry* published by PCAF.

As the power generation sector has long been the world's highest emitter of greenhouse gas emissions, there has been widespread adoption of corporate and project-level greenhouse gas accounting which is available both in company disclosures and regulatory databases.

We relied on a variety of different sources to calculate each customer's emissions intensity of generation. For our customers with assets in Australia, we use the Scope 1 emissions and gross generation data they report each year to the Australian Clean Energy Regulator (CER) (responsible for administering Australia's *National*

Greenhouse and Energy Reporting Act). We used the latest available data submitted to the CER to calculate the emissions intensity of our customers' generation fleets, meaning we used generation and emissions data applicable for the year ending 30 June 2021 for our 2022 calculations.

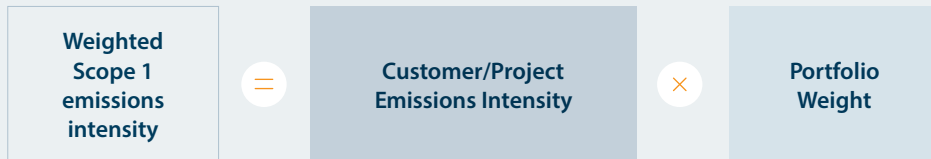
For customers with assets outside of Australia we use emissions and generation data reported in corporate disclosures – the main method we applied. Where this information was unavailable, or unsatisfactory, we estimated our customers' emissions intensity of generation based on their ownership stake in generation capacity that we sourced from an Asset Level Database (ALD), compiled and updated regularly by climate and energy data specialist Asset Resolution.

The annual generation from these assets was calculated by applying global average capacity factors for the relevant technology type reported in the International Energy Agency's (IEA) 2021 World Energy Outlook. Emissions factors were sourced from the IEA's Emissions Factors 2021 publication and applied for the relevant technology type of the plant i.e. coal, gas or oil in the country that the customer's assets were located. Assets that were based on nuclear, hydro and renewables technologies were assumed to have an emissions intensity of zero. This calculation approach was also used to 'sense-check' the reported emissions intensity of all our customers to ensure we could have confidence in their reported information.

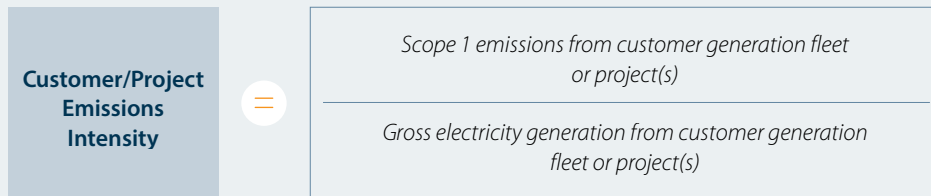
18. Whenever they are dispatching electricity into centralised energy transmission grids.

> 3.4 Calculation of portfolio-weighted emissions intensity

ANZ uses a debt-weighted, emissions intensity metric to measure the extent to which our financing is supporting the transition of the electricity generation sector. By focusing on each customer's emissions intensity of generation – irrespective of the size of their fleet – it allows comparability between our customers. ANZ calculates the portfolio-weighted emissions intensity for each customer and project in accordance with the following formula:



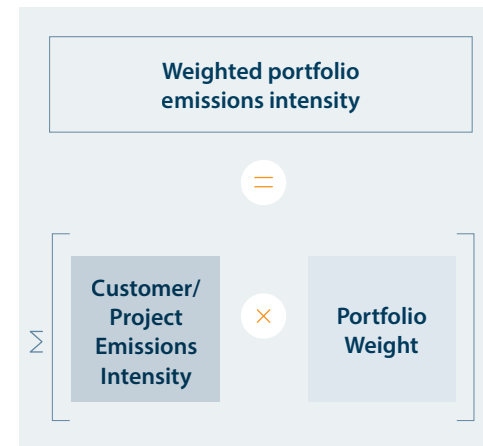
The emissions intensity of our customers' generation fleet or projects, is calculated by dividing their Scope 1 emissions from electricity generation by their gross electricity generation over the corresponding 12-month period, as shown in the formula below:



The portfolio weight for each customer is a measure of ANZ's financing to a customer relative to our total financing to all customers and projects in the electricity generation sector. It is calculated in accordance with the formula shown below:



To calculate the emissions intensity of our full portfolio, we aggregate the company-level performance indicators in accordance with the following formula:



While ANZ considers that a weighted portfolio emissions intensity metric is a useful way to demonstrate how our finance is supporting the transformation of the electricity sector, we remain open to adjusting our approach as standards continue to evolve. Re-baselining may also need to occur as a result of proposed changes to the way Exposure at Default is calculated for certain types of products. These changes are being driven by the Australian Prudential Regulatory Authority and scheduled for introduction in 2023.¹⁹

3.5 Climate Scenario and Target

ANZ has chosen to align our 2030 target with the IEA's NZE 2050 Scenario that was published in 2021. This Scenario satisfies guidance issued by the Net Zero Banking Alliance that banks should use scenarios produced from credible and well-recognised sources that align with no/low overshoot 1.5°C transition pathways.

ANZ chose 2020 as the baseline for our 2030 target for the electricity generation sector where the global average emissions intensity was 459 kgCO₂ per MWh.²⁰ In contrast, the emissions intensity of ANZ's portfolio was measured at the end of 2020 as 237 kgCO₂ per MWh²¹ – almost 50% below the global benchmark. This was in large part due to 39% of our portfolio being companies and projects that were dedicated entirely to the generation of renewable energy.

The fact that our portfolio was starting well below the global average in 2020, was a key factor in our decision to set a 50% reduction target in the emissions intensity of our portfolio by 2030. While this is below the 70% reduction in emissions intensity earmarked for the global electricity sector in the IEA's NZE 2050 Scenario, our 2030 target of 119 kgCO₂ per MWh²², would still have our portfolio below the NZE 2050 trajectory to net zero emissions by 2040 for the global electricity sector.²³

¹⁹. APRA is implementing a new regulatory capital framework for Australian banks that will be effective from 1 January 2023. This will result in changes in the credit risk capital that ANZ is required to set aside in respect of different products and as a result, will impact the way Exposure at Default is calculated. This is likely to result in restatements of our disclosures from previous years, including those relating to coal and other segment specific metrics. ²⁰. 2021 World Energy Outlook (p37). ²¹. This is a restatement of the 2020 baseline we reported in 2021 of 258 kgCO₂ per MWh. ²². This is a restatement of our 2030 target we reported in 2021 of 129 kgCO₂ per MWh. ²³. The IEA's NZE 2050 scenario sets out a pathway for the global electricity sector to reach net zero emissions by 2040, with a 2030 interim target of 138 kgCO₂ per MWh (2021 World Energy Outlook (p37)).

While we are committed to supporting our customers to phase-out coal-fired generation capacity from their portfolios, we understand that there are broader social and economic factors that must be balanced against the need to rapidly reduce emissions. This is illustrated in our home market of Australia where coal fired generation still meets more than half of the country's electricity needs.²⁴ Supporting our existing customers with increased lending to transition their portfolio to clean energy sources may mean that our pathway to a net zero emissions portfolio is uneven rather than linear. We think that this is an important and responsible step for us to take to achieve real-world emissions reductions and to leverage what are often longstanding relationships with our customers and who are committed to transitioning their portfolios.

3.6 Complementary power generation metric – power generation financing mix

We also report a complementary power generation metric that is aimed at providing enhanced transparency of how our finance is supporting the transition of the power generation sector. The metric shows the debt-weighted generation 'stack' of our customers that is based on the PACTA for Banks methodology developed by the 2dii²⁵ in collaboration with global banks.

Under the methodology, the installed capacity of generation assets owned by our customers is allocated to ANZ based on the proportion of their loan to our overall exposures to the electricity generation sector. For example, if a customer owns a 600 megawatt (MW) gas-peaker power station and a 200MW wind farm and their loan makes up 2% of our overall exposures to the electricity generation sector, ANZ is allocated 12MW of the gas-fired power station and 4 MW of the wind farm.

For each customer, the installed capacity of generation assets allocated to ANZ are aggregated and assigned to one of six technology types:

- Coal
- Gas
- Oil
- Nuclear
- Hydro
- Renewables

The debt-weighted generation 'stack' of our customers is presented as a 100% 'stacked' bar chart, which allows benchmarking with climate scenarios that show how electricity generation capacity could change in future to meet the goals of the Paris Agreement. We have chosen to benchmark with the IEA's Net Zero by 2050 Scenario that was first published by the IEA in 2021 and updated annually in their World Energy Outlook document.

Given the metric skews results towards large generators, it highlights those parts of our portfolio potentially more exposed to transition risks which, could in turn, manifest as credit risks for ANZ.

24. Australian Energy Update 2022, Table O: Australian electricity generation, by state and territory, by fuel type, physical units.

25. A full description of the PACTA for Banks methodology that is applied to the power generation sector is available [here](#).

4. Industrial sector – Aluminium, Cement and Steel

4.1 Overview

In 2022, ANZ set targets to reduce the emissions intensity of three key industrial sectors by 2030 (all on a 2021 baseline):

➤ **Aluminium** -30%

➤ **Cement** -20%

➤ **Steel** -28%

ANZ uses a debt-weighted, emissions intensity metric (i.e. carbon emissions per unit of cement, aluminium or steel) to measure the extent to which our financing is supporting the transition of these three key industrial sectors. Institutional customers included in the metric each year are those to which we have exposure at default (EAD) at the end of our financial reporting year (September 30) and that own or operate one or more alumina refineries or aluminium smelters, cement plants, or steel mills.

The targets cover the Scope 1 and 2 emissions from assets either owned by our customers or coming under their operational control. Our targets do not currently capture Scope 3 emissions, or emissions from the upstream mining of raw materials such as bauxite, iron-ore, metallurgical coal or limestone. We will consider extending our reporting to include the wider value chain in the coming years as standards continue to evolve. Our targets incorporate the most material sources of emissions in each of the three industrial sectors covered.

Our choice of an emissions intensity reduction target recognises that 1.5°C aligned scenarios point to the need for an increase or continued availability of aluminium, cement and steel out to 2050. Our role is to support continued production of these key materials by our customers as they move towards lowering their emissions intensity.

The key design choices we used in calculating our emissions intensity reduction target for three key industrial sectors are summarised in Tables 4.1–4.3.

Table 4.1 – Key design choices in calculating aluminium production target

Activities Included	<ul style="list-style-type: none"> Companies that own or operate one or more alumina refineries and/or aluminium smelters
Company Emissions Included	<ul style="list-style-type: none"> Scope 1 & 2
Metric	<ul style="list-style-type: none"> Emissions intensity of aluminium production (tCO₂-e/t aluminium)
Financing Activities Included	<ul style="list-style-type: none"> Exposure at Default. This reflects total committed loans (drawn plus undrawn amounts) and all trade and markets products
Attribution Approach	<ul style="list-style-type: none"> Portfolio-weighted approach (measures ANZ's financing to aluminium customers as a proportion of ANZ's total financing to the sector)
Benchmarking Scenario	<ul style="list-style-type: none"> International Aluminium Institute (IAI) 1.5°C scenario
Key External Data Sources	<ul style="list-style-type: none"> Customer disclosures Wood Mackenzie Transition Pathways Initiative International Aluminium Institute

Table 4.2 – Key design choices in calculating cement²⁶ production target

Activities Included	<ul style="list-style-type: none"> Companies that own or operate one or more cement plants
Company Emissions Included	<ul style="list-style-type: none"> Scope 1 & 2
Metric	<ul style="list-style-type: none"> Emissions intensity of production of cement (tCO₂-e/t cement)
Financing Activities Included	<ul style="list-style-type: none"> Exposure at Default. This reflects total committed loans (drawn plus undrawn amounts) and all trade finance and markets products
Attribution Approach	<ul style="list-style-type: none"> Portfolio-weighted approach (measures ANZ's financing to cement customers as a proportion of ANZ's total financing to the sector)
Benchmarking Scenario	<ul style="list-style-type: none"> International Energy Agency (IEA) Net Zero Emissions by 2050 Scenario
Key External Data Sources	<ul style="list-style-type: none"> Customer disclosures Asset Resolution International Energy Agency

4.2 Activities and Emissions in Scope

ANZ considers that an emissions intensity target (tCO₂-e/t product) is the best way to demonstrate how our finance is contributing to the transition of key industrial sectors. While increases in support to existing customers to help their transition to less carbon intensive production may translate into short to medium term increases in emissions intensity of our financing activities, we believe this is the right step for us to take to support real-world reductions in emissions over the longer term.

To identify customers with aluminium, cement and steel production assets, we used the ANZSIC code for alumina refining, aluminium smelting, cement and lime manufacturing and basic iron and steel manufacturing. This captures corporate and project financing to customers whose main business activity falls under one of these activities. We also sought to capture the operations of diversified customers that produce aluminium, cement and steel to ensure greater completeness of our exposures to each sector. This excluded the emissions that result from other parts of their business and our exposures to them.

Table 4.3 – Key design choices in calculating steel production target

Activities Included	<ul style="list-style-type: none"> Companies that own or operate one or more steel production mills
Company Emissions Included	<ul style="list-style-type: none"> Scope 1 & 2
Metric	<ul style="list-style-type: none"> Emissions intensity of steel production (tCO₂-e/t steel)
Financing Activities Included	<ul style="list-style-type: none"> This reflects total committed loans (drawn plus undrawn amounts) and all trade finance and markets products
Attribution Approach	<ul style="list-style-type: none"> Portfolio-weighted approach (measures ANZ's financing to steel customers as a proportion of ANZ's total financing to the sector)
Benchmarking Scenario	<ul style="list-style-type: none"> International Energy Agency (IEA) Net Zero Emissions by 2050 Scenario
Key External Data Sources	<ul style="list-style-type: none"> Customer disclosures Asset Resolution International Energy Agency

The emissions included in our industrial sector targets are the Scope 1 and 2 emissions from the production assets that are fully or partially owned by our customers or that come under their operational control. While most of these emissions are carbon dioxide, it also includes a small amount of methane and nitrous oxide emissions. For the denominator of the emissions intensity target, we have used gross production of our customers, to ensure that we are able to benchmark on a like-for-like basis with the International Aluminium Institute 1.5°C scenario and the IEA's NZE 2050 Scenario.

Currently, our methodology does not consider the use of any offsets that are used by our customers to reduce their emissions. However, given the 'hard-to-abate' nature of some emissions sources within these sectors, there may be residual and unavoidable emissions in 2050, where technologies do not currently exist to eliminate emissions. We will look to further develop a clear stance on the use of offsets in the coming years, however we apply a general principle that emissions should first be avoided, with offsetting used only to compensate for residual and unavoidable emissions.

²⁶. In line with the 2022 SBTi Cement Guidance, when we refer to our intensity target in tCO₂-e/t cement, we have actually set an intensity target per tonne of 'cementitious product' rather than per tonne of 'cement'. This delineation is important as clinker substitutes – such as gypsum, limestone and cement kiln dust – are an important way to help decarbonise the cement sector. 'Cementitious product' consists of all clinker produced by our customers that is available for sale, plus all clinker substitutes consumed for blending, plus all cement substitutes. See the [Cement CO₂ and Energy Protocol](#).



In line with common aluminium industry practice, the total emissions intensity represents the combination of refining and smelting operations indexed to metric tons of primary aluminium production. This is applied at a ratio of ~2.0 metric tons of alumina to 1.0 metric tons of smelted aluminium²⁷ that is calculated in accordance with the formula below:

Customer/Project Emissions Intensity	=	$\frac{\text{Total scope 1 and 2 emissions from alumina and aluminium production}}{(\text{Tonnes of alumina} \times \text{ratio}) + \text{Tonnes of aluminium}}$
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27. Carbon Performance Assessment of aluminium: note on methodology, Transition Pathway Initiative 2021.
28. SBTi Cement Guidance, September 2022. 29. The Cement CO₂ and Energy Protocol.

In line with the 2022 SBTi Cement Guidance²⁸ and our understanding of industry practices, when we refer to our cement intensity target in tCO₂-e/t cement, we have set an emissions intensity target that uses tonnes of 'cementitious product' in the denominator rather than tonnes of 'cement'. This delineation is important as clinker substitutes – such as gypsum, limestone and cement kiln dust – are an important way for the cement sector to reduce emissions. 'Cementitious product' consists of all clinker produced by our customers for sale, plus all clinker substitutes consumed for blending, plus all cement substitutes.²⁹ Our target covers the gross Scope 1 and 2 emissions arising from customers that produce cement. In line with the SBTi Cement Guidance and the Cement CO₂ Protocol (2011) our disclosures are expressed in terms of 'gross' emissions, i.e., emissions from combustion of waste derived fuels are included in the emissions total and are not considered as a biogenic source.

Where customers purchase semi-finished products such as alumina, clinker or crude iron these are not included within our emissions intensity target as they are not included in the customers Scope 1 or 2 emissions. Scope 3 emissions will be considered for inclusion in future years.

4.3 Data used to calculate customer emissions intensity

To maximise the quality of the data we used to calculate our financed emissions, ANZ was guided by the *Global GHG Accounting and Reporting Standard for the Financial Industry* published by PCAF. With aluminium, cement and steel all being high emitting sectors, there has been widespread adoption of corporate and project-level

greenhouse gas accounting which is available in company reports and regulatory or third-party databases.

We prioritised the use of company reported emissions and production data based on the equity accounting approach. If equity-based data was not reported, we used company reported emissions and production data based on the operational control consolidation approach.

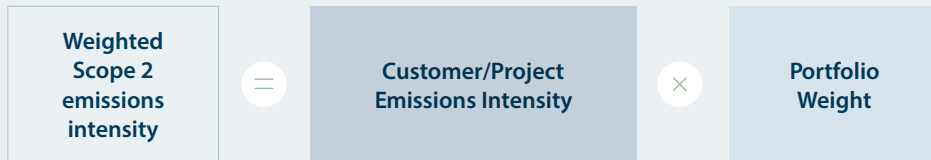
We prefer to use our customers' equity-reported Scope 1 and 2 emissions intensity data because some of our diversified customers often have small, non-operating stakes in production facilities that would otherwise be accounted as zero emissions if we had chosen an operational control consolidation approach. While these companies may not be the operator of the projects, we believe their equity in production facilities still provides them with a degree of influence in shaping policies and initiatives aimed at mitigating Scope 1 & 2 emissions.

Where our customers did not report any Scope 1 & 2 emissions data, we relied on detailed estimates provided by specialist third party data vendors – Wood Mackenzie, Asset Resolution and The Transition Pathways Initiative, that use proprietary models to estimate emissions down to the individual asset level.

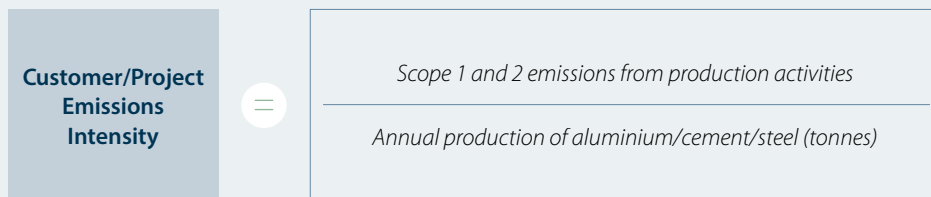
We used the latest available customer information on production and emissions as at September 30 2022 to report our portfolio wide emissions intensity. In some cases, 2022 data had not yet been released and so 2021 data was relied upon. We consider this the most accurate representation of ANZ's emissions intensity in 2022.

4.4 Calculation of portfolio-weighted emissions intensity

ANZ uses a debt-weighted, emissions intensity metric to measure the extent to which our financing is supporting the transition of three key industrial sectors – aluminium, cement and steel. The portfolio-weighted emissions intensity for each customer and project is calculated in accordance with the following formula:



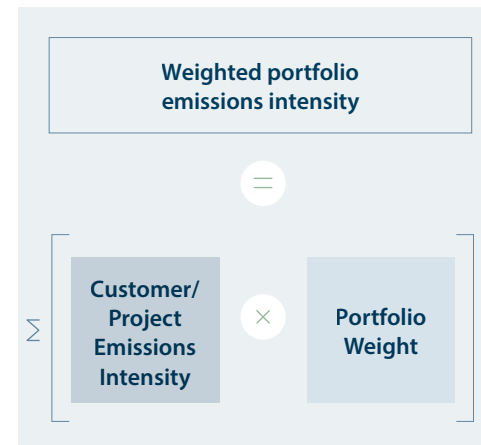
The emissions intensity of our customers’ production of aluminium, cement and steel is calculated by dividing their Scope 1 and 2 emissions (associated with their production activities), by their overall production over the corresponding 12-month period, as shown in the formula below:



The portfolio weight for each customer is a measure of ANZ’s financing to a customer relative to our total financing to all customers and projects in each of the three industrial sectors. It is calculated in accordance with the formula shown below:



To calculate the emissions intensity of our full portfolio, we aggregate the company-level performance indicators in accordance with the following formula:



While ANZ believes that a weighted portfolio emissions intensity metric is a useful way to demonstrate how our finance is supporting the transformation of the aluminium, cement and steel sectors, we remain open to considering other approaches as standards continue to evolve.

4.5 Climate Scenario and Target

ANZ has chosen to align our 2030 targets with the International Aluminium Institute’s 1.5°C scenario (aluminium) and the IEA’s NZE 2050 Scenario (cement and steel) that was published in 2021. These scenarios satisfy guidance issued by the Net Zero Banking Alliance that banks should use scenarios produced from credible and well-recognised sources that align with no/low overshoot 1.5°C transition pathways.

Aluminium

ANZ chose 2021 as the baseline for our 2030 aluminium target where the global average emissions intensity was 10.29tCO₂-e/t Aluminium.³⁰ In contrast, the emissions intensity of ANZ’s portfolio was measured at the end of 2021 as 8.30tCO₂-e/t Aluminium – well below the global benchmark.

The decision to choose 2021 as the baseline for our 2030 aluminium target was guided by data availability. Corporate reporting is improving year-on-year, with companies moving towards more granular disclosures over time. For our diversified and vertically integrated customers, this improved granularity of reporting has allowed us to capture emissions and production data related specifically to the aluminium producing segment of their business.

ANZ has chosen to align our 2030 target with the 2021 International Aluminium Institute (IAI) 1.5°C scenario.³¹ The IAI scenario shows that the emissions intensity of electricity used in aluminium production would need to reduce by 98% by 2050, compared with 2018.

30. International Aluminium Institute 1.5°C Decarbonisation Scenario. 31. Ibid.

Global demand for primary aluminium is expected to increase by up to 40% and secondary (recycled) production will more than triple through to 2050.

Primary aluminium production is highly electricity intensive. Efforts to decarbonise the sector will be heavily reliant on decarbonisation of the electricity supply through switching to renewables. On the other hand, secondary production of aluminium (recycling) has a significantly lower emissions intensity than primary production but is limited by scrap availability. Limiting the use of aluminium in final products through light weighting and efficiency in design are also key steps to reduce emissions from the sector. Investment into the commercialisation of promising, but currently expensive technologies such as carbon-free anodes³², will be the key to eliminating the harder to abate emissions of the sector.

Cement

2022 is the first year that ANZ has reported on the emissions intensity of our cement financing activities. Our 2021 portfolio baseline of 0.61 tCO₂-e/tonne cement is marginally above the 2021 global average of 0.59 tCO₂-e/tonne cement.³³

Our choice of 2021 as the baseline for our 2030 cement target, was guided by data availability. Our cement customers are moving towards more granular disclosures year-on-year which has allowed us to gain a good understanding of the emissions profile of the cement producing segment of their business. ANZ has chosen to align our 2030 target with the IEA NZE 2050 scenario, published by the IEA in May 2021.

The IEA NZE 2050 scenario shows that the emissions intensity of cement production would need to reduce by ~95% by 2050, whilst the overall demand profile for cement remains relatively flat.

The Global Cement and Concrete Association considers the opportunity for decarbonisation for the cement sector will rely on substituting clinker for supplementary cementitious materials (e.g. fly ash), alternate fuels for kilns (e.g. biomass instead of fossil fuels), decarbonisation of electricity and plant and end-user efficiencies. The cement industry will rely on carbon capture and utilization/storage (CCUS) technologies becoming commercially viable to capture the remaining 'hard-to-abate' emissions from the chemical reaction of heating limestone to achieve net-zero by 2050 for the industry. Concrete³⁴ naturally re-absorbs CO₂ from the atmosphere over its lifetime, but this is not enough to neutralize the impact of its initial production.

The currently limited availability of cost-effective technologies to reduce the hard-to-abate process emissions of cement production, makes the pathway towards our target less clear in comparison to other sectors. However, customer discussions to date have been positive and revealed that significant investment in research and development is underway.

Steel

ANZ chose 2021 as the baseline for our 2030 target for the steel sector where the global average emissions intensity was 1.89 tCO₂-e/tonne steel.³⁵

This aligns closely with the emissions intensity of ANZ's portfolio that was measured at the end of 2021 as 1.90 tCO₂-e/t steel.

Our choice of 2021 as the baseline for our 2030 steel target, was guided by data availability. Our steel customers are moving towards more granular disclosures year-on-year which has allowed us to gain a good understanding of the emissions profile of the steel producing segment of their business.

ANZ has chosen to align our 2030 target with the IEA NZE 2050 scenario, published by the IEA in May 2021.³⁶ The IEA NZE 2050 scenario shows that the emissions intensity of steel production would need to reduce by 92% by 2050, compared with 2019. Global demand for steel is expected to increase marginally through to 2050, with the share of steel production using electric arc furnaces increasing from 24% in 2020 to 53% in 2050.

The opportunities for carbon emission reductions for the steel sector are well defined, however the technologies facilitating these reductions are not yet commercially viable. The wide-scale deployment of technologies such as carbon capture utilization/storage (CCUS) and near-zero-emissions direct reduction of iron-ore using green hydrogen and bioenergy, will be the key to eliminating the 'hard-to-abate' emissions of the sector. Secondary production of steel, via electric arc furnaces, has a significantly lower emissions intensity, but is limited by scrap availability and challenges associated with producing high-quality steel from scrap.

Given the significant technological advances required to enable commercialisation of low emissions steel making, the emissions intensity reduction pathway of the steel sector will likely be slow moving; however, we are already seeing efficiency measures being taken and investment into research and development. We remain optimistic this will support a reduction in emissions intensity post 2030 in line with the IEA NZE 2050 scenario.

4.6 Complementary industrial sector metrics – absolute emissions and portfolio emissions intensity

In addition to reporting annual performance against our emissions intensity target, the guidelines of the NZBA make clear the need for signatory banks to report the emissions profile of our aluminium, cement and steel portfolios using two additional metrics:

- Portfolio wide emissions intensity; and
- Sector-specific absolute emissions

Portfolio wide emissions intensity metric:

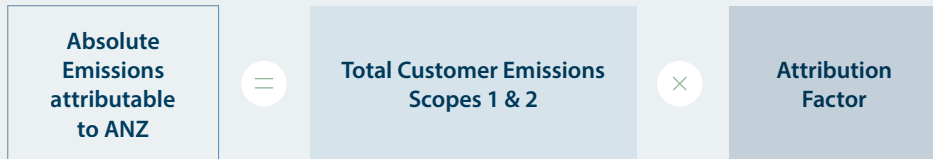
ANZ has chosen to report this as kilograms of CO₂-e per dollar lent. This is calculated by dividing the absolute financed emissions (calculated in accordance with the methodology outlined below) by the total financing to customers that were considered within the boundary of the metric.

³². Elysis is a technology that replaces traditional carbon anodes (large carbon blocks which conduct electricity during aluminium smelting, producing significant greenhouse gas emissions) with carbon free anodes that produce only oxygen. ³³. IEA NZE 2050 Tracking Report, 2022. ³⁴. Concrete is made of cement, sand, aggregates, water and admixtures. Cement is the 'glue' which binds the ingredients of concrete together. ³⁵. World Steel Association, Climate change and the production of iron and steel. ³⁶. We acknowledge the November 2022 release of the Draft Steel Science Based Target Setting Guidance Document and tool, by the Science-based Target Initiative (SBTi) that is scheduled to be finalised in mid-2023. We will consider any implications that this has on our current methodology and target.

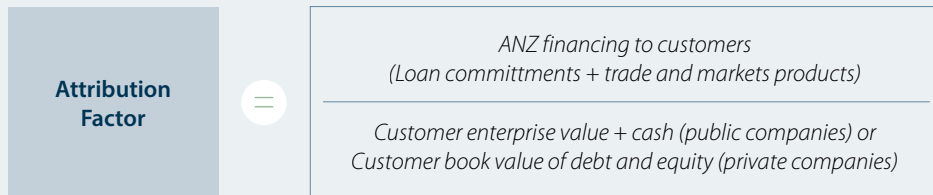


Sector-specific absolute emissions metric: ANZ has chosen to report this as Mt CO₂-e.

To determine what portion of our customer’s emissions are attributable to ANZ’s financing activities, we multiply each of our customers’ emissions by an attribution factor as per the formula below:



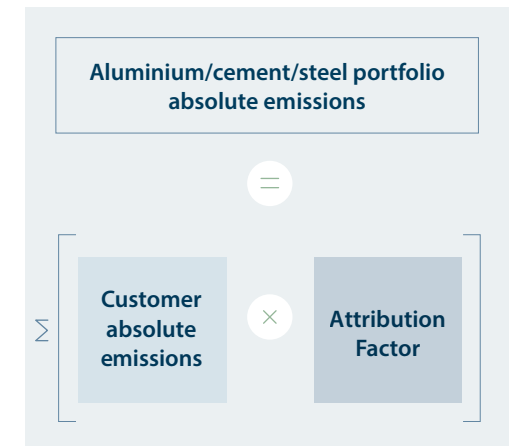
The attribution factor is calculated by dividing ANZ’s financing by our customer’s value as shown in the formula below:



For publicly traded companies, customer value is enterprise value including cash (EVIC). For privately held companies, customer value is the book value of debt plus equity. This approach reflects the relative weight of our financing within a customer’s capital structure.

ANZ has taken a conservative approach to the numerator in the attribution factor and has included the total committed loans we have issued to aluminium, cement or steel customers, in addition to the full value of trade and markets products (expressed in Exposure at Default terms). This is a departure from the PCAF recommended approach which only recommends the inclusion of the outstanding amount of loans and investments. While this approach means that we are attributed a higher proportion of our customers’ emissions, we think this provides a more accurate representation of our support to these sectors and the transition risks to which we are potentially exposed to. We also consider that including all products provides a better insight on how we are supporting our customers to reduce their emissions intensity. The choice of the committed loan amount, rather than the outstanding amount, also removes the risk of volatility in customer drawdowns that may impact the achievement of our target.

To calculate the financed emissions of our full portfolio, we aggregate the financed emissions of our individual customers in accordance with the following formula:



ANZ will consider adjusting our approach to calculating financed emissions as the quality and availability of data improves and as standards continue to evolve. Re-baselining may also need to occur as a result of proposed changes to the way Exposure at Default is calculated for certain types of products. These changes are being driven by the Australian Prudential Regulatory Authority and scheduled for introduction in 2023.³⁷

³⁷ APRA is implementing a new regulatory capital framework for Australian banks that will be effective from 1 January 2023. This will result in changes in the credit risk capital that ANZ is required to set aside in respect of different products and as a result, will impact the way Exposure at Default is calculated. This is likely to result in restatements of our disclosures from previous years, including those relating to coal and other segment specific metrics.

5. Commercial Real Estate

5.1 Overview

ANZ set a target to reduce the emissions intensity of large-scale office buildings and shopping centres by 60% at the end of 2021. The buildings covered by the target are either fully or partially owned by large Real Estate Investment Trust (REIT) and property fund customers in our Australian Institutional loan book.

Non-residential buildings are one of the largest end users of electricity in Australia and will play a critical role in Australia's path to net zero emissions. We recognise there will be significant and growing opportunities to support our customers to reduce their energy use and the carbon intensity of the energy that they use – both for new buildings and the retrofit of existing buildings.

The target metric is calculated by adding up the carbon emissions (Scope 1, 2 & 3) from our customers' office building and shopping centre portfolios and dividing this by their 'net lettable area' (NLA), which is a recognised metric in the commercial buildings sector. We believe it provides valuable insight on the operational performance of hundreds³⁸ of office buildings and shopping centres we have helped our customers to construct or upgrade in prior years. The metrics will also reflect any steps that our customers take in the future to improve the environmental performance of their portfolio, which may be supported by lending from ANZ.

While we have not yet attempted to attribute our customers' absolute emissions to our lending, we will seek to better understand this in the coming years to ensure that we are aligned with leading methodologies, like PCAF, for the reporting of our portfolio emissions. We acknowledge that our customers have multiple sources of capital and so we do not claim that any reported reductions in emissions intensity are entirely due to ANZ's financing.

Our choice of an emissions intensity reduction target recognises that 1.5°C aligned scenarios point to the need for substantially more floor area in service buildings in 2050 than it does today.³⁹ At the same time, absolute energy use declines by more than 20% while emissions from energy use need to be completely removed. It's an enormous challenge, but one where many of our customers in the commercial building sector are already making significant progress.

The key design choices we used in calculating our emissions intensity reduction target for our commercial buildings financing activities are summarised in Table 5.1.

While the majority of building emissions are associated with their use of electricity (Scope 2 emissions), our decision to set a more ambitious 2030 emissions intensity target for the commercial building sector compared with the power generation sector, takes into account the significant opportunities for improved energy efficiency, greater electrification of final energy use, voluntary purchases of green electricity, and self-generation of electricity from solar PV installations.

Table 5.1 – Key design choices in calculating commercial buildings target

Activities Included	<ul style="list-style-type: none"> Office buildings and shopping centres fully or partially owned by large Real Estate Investment Trust (REIT) and property fund customers in our Australian Institutional loan book
Company Emissions Included	<ul style="list-style-type: none"> Scope 1 and 2⁴⁰ emissions (from building operational energy use) Scope 3 emissions (Category 3 – Fuel and energy related emissions)
Metric	<ul style="list-style-type: none"> Emissions from building energy use per square meter of net lettable area (kgCO₂-e/NLA)⁴¹
Financing Activities Included	<ul style="list-style-type: none"> All lending to building owners with operational assets in Australia
Attribution Approach	<ul style="list-style-type: none"> No financing attribution approach applied
Benchmarking Scenario	<ul style="list-style-type: none"> International Energy Agency (IEA) Beyond 2°C (B2D) scenario for service buildings presented in the 2017 Energy Technology Perspectives report⁴²
Key External Data Sources	<ul style="list-style-type: none"> National Australian Building Energy Rating Scheme (NABERS) energy rating certificates (Emissions Data) Australian Government Building Energy Efficiency Register (NLA of office buildings)

38. At the end of FY22, the metrics captured the collective performance of 395 office buildings and 122 shopping centres that were either fully or partially owned by our customers. **39.** The IEA's Net Zero Emissions by 2050 scenario shows that the floor area of service buildings will be 57% higher in 2050 than it was in 2020. **40.** Based on the market-based method that is defined in the GHG Protocol Scope 2 Guidance. **41.** On most occasions this was associated with base building energy use, which our customers elect to get their buildings rated for. **42.** The B2D scenario puts service buildings on a pathway to achieve net zero emissions by 2050, with most of these savings to be achieved before 2030. The 2050 convergence to net zero emissions for service buildings aligns closely with the Net Zero Emissions by 2050 scenario published by the IEA in May 2021.

5.2 Activities and Emissions in Scope

Most of the office buildings and shopping centres that are covered by our target, obtain NABERS energy ratings that cover the operational energy use in the base building, which includes foyers, lifts, heating, ventilation and air conditioning (HVAC) equipment and bathrooms. This means that they exclude the additional energy used in tenanted space such as lighting, IT and other plug-in load and appliances.

While the energy used in tenancy space is estimated to account for around 44% of total office building energy use⁴³, there is no easy way to account for this additional energy load in our commercial building metric given that tenants have operational control of their leased space and are responsible for the payment of their own electricity that is usually metered separately from the rest of the building.

Our reported metric is therefore mostly a reflection of the emissions arising from base building energy consumption, with a small amount based on whole building emissions. The emissions sources included are the Scope 1 and 2 emissions from building energy use in addition to Scope 3 emissions related to the production of fuels and energy purchased and consumed by our customers (Category 3).

As base building services are used by all tenancies of a building or shopping centre, ANZ considers it appropriate to normalise these cumulative emissions by the combined net lettable area of all office buildings and shopping centres that are owned or operated by our customers.

5.3 Data used to calculate customer emissions intensity

Emissions data is sourced from NABERS Energy rating certificates that are issued to our customers and includes a mixture of both Whole Building and Base Building ratings. The ratings are accessible from a public register.⁴⁴

Data on the NLA of office buildings is sourced from the Australian Government's Building Energy Efficiency Register. For office buildings and shopping centres that don't have a Building Energy Efficiency Certificate, the NLA of our customers' buildings is back-calculated based on information appearing in the NABERS Energy Rating. This is calculated by dividing the total energy use of the building by the published energy use per m² of NLA.

5.4 Calculation of portfolio emissions intensity

We have established separate metrics to cover our commercial office and shopping centre portfolio in Australia, where the majority of exposures are located. The carbon intensity metric is calculated by adding up the carbon emissions from our customers' office building and shopping centre portfolios and dividing this by the combined 'net lettable area' (NLA). This is calculated in accordance with the following formula:

$$\text{Commercial building portfolio emissions intensity} = \frac{\sum \text{Customer Building Emissions (kg CO}_2\text{-e)}}{\sum \text{Customer Net Lettable Area (m}^2\text{)}}$$

While ANZ considers that the emissions intensity metric we have developed for our commercial buildings portfolio, provides insights on how customers are collectively transitioning to net zero emissions, there are also a number of limitations. The main limitations are that it doesn't currently allow a direct linkage of ANZ finance to these improvements and that it doesn't 'pick up' the emissions arising from energy use in building tenancies, or emissions embodied in building materials. We remain open to adjusting our approach to measuring how our finance is contributing to the transition of the commercial building sector as standards continue to evolve.

5.5 Climate Scenario and Target

ANZ has chosen to align our 2030 target with the IEA's Beyond 2°C (B2D) scenario for service buildings presented in the 2017 Energy Technology Perspectives report. The B2D scenario puts service buildings on a pathway to achieve net zero emissions by 2050, with most of these savings to be achieved before 2030. These reductions will primarily be achieved through energy efficiency improvements, increased electrification of final energy use and the decarbonisation of global electricity production. The 2050 convergence to net zero emissions for service buildings aligns closely with the Net Zero Emissions by 2050 scenario published by the IEA in May 2021.



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