Barclays PLC

About BlueTrack™ - an update on our methodology for reducing our financed emissions

BARCLAYS

Contents

Inside this book

Barclays' Climate Strategy 01

Our approach by sector

- **Energy** 04
- **Power** 09
- **Cement** 14
- **Metals** 16

Known areas for future enhancement 19

March 2022, Version 1.1

Barclays' Climate Strategy

Addressing climate change is an urgent and complex challenge. It requires a fundamental transformation of the global economy, so that society stops adding to the total amount of greenhouse gases in the atmosphere, achieving what is known as net-zero emissions.

At Barclays, we are determined to play our part.

In March 2020, we announced our ambition to be a net zero bank by 2050, becoming one of the first banks to do so.

We have a strategy to turn that ambition into action:

1. **Achieving net zero operations**
   Barclays is working to achieve net zero operations and reducing supply chain emissions, investing in the continued decarbonisation of our operations, and in the development of a net zero pathway for the emissions from our supply chain.
2. **Reducing our financed emissions**
   Barclays is committed to aligning its financing with the goals and timelines of the Paris Agreement.
3. **Financing the transition**
   Barclays is providing the green and sustainable finance required to transform the economies we serve.

Our strategy is underpinned by the way we assess and manage our exposure to climate-related risk.

In addition, we believe that industry co-operation, particularly in setting common standards and transparent reporting, is important for all our stakeholders. We continue to engage with peers, industry experts and academics to assess the transition to a low-carbon economy and consider emerging methodologies.

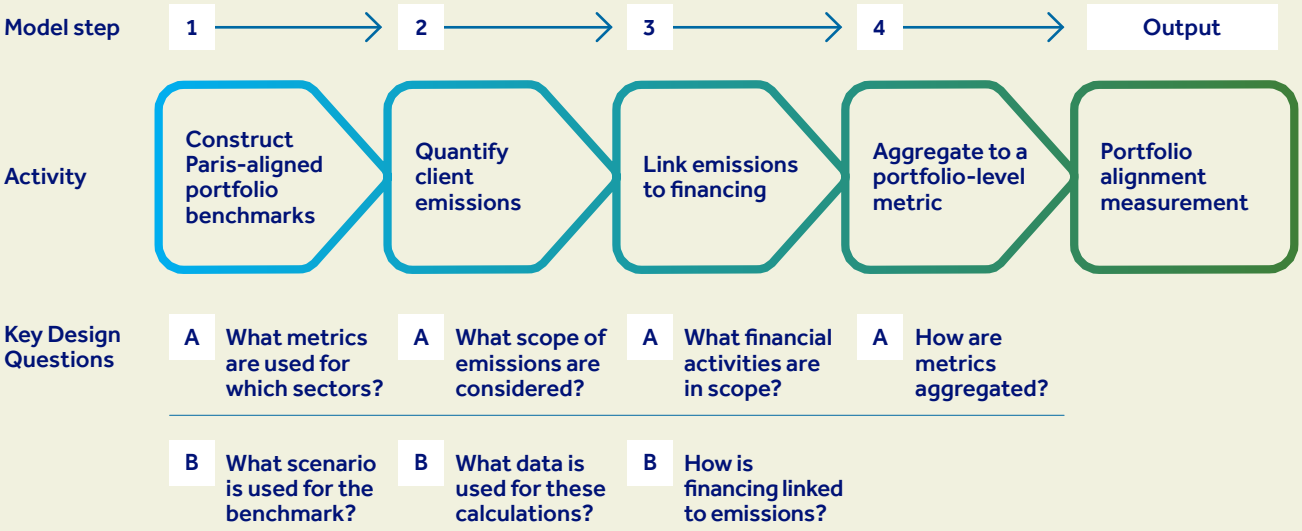
Barclays was a founding member of the Financial Stability Board's (FSB) Task Force on Climate-Related Financial Disclosures (TCFD) and has aligned its disclosures to this since 2017. In 2021, we were a founding member of the Net Zero Banking Alliance (NZBA), part of the Glasgow Financial Alliance for Net Zero (GFANZ). The NZBA is an industry led, UN convened alliance that brings together banks across the world and represents over 40% of global banking assets. As part of this group, we are committed to aligning our lending and investment portfolios with net-zero emissions by 2050.

BlueTrack™

In November 2020, we published details of our strategy to measure and manage the alignment of our client portfolios to the goals and timelines of the Paris Agreement. Our approach is underpinned by BlueTrack™, a methodology we have developed to measure and track our financed carbon emissions at a portfolio level against the goals of the Paris Agreement. BlueTrack™ built on existing industry approaches to cover not only lending but also capital markets financing. This better reflects the breadth of our support for clients through our investment bank.

Most of our emissions result from the activities of the clients that we finance and those generated in their respective value chains. These are so-called 'financed emissions' and fall within the general definition of Scope 3 emissions for us as a bank (see page 2). Our climate dashboard shows our financed emissions targets over time and our progress towards them by comparing the BlueTrack™ metrics for each sector against a benchmark emissions level.

Key steps in BlueTrack sector assessment



What are the key updates in this paper?

This paper is an update to the "Introducing BlueTrack™" whitepaper that we published in November 2020. This updated version explains several enhancements and clarifications that we have made to our methdology for the Energy and Power sectors and details the methodology that we will use to track the new targets we have set for the Cement and Steel sectors.

Updated methdology for Energy

In this paper we have set out information on changes to the methodology used for our Energy portfolio. We have now increased the granularity of the scope 1 and 2 intensity estimates so they incorporate company specific circumstances such as the mix of production by technology and extraction method. Previously our Scope 1 and 2 energy intensity factors were derived from the International Energy Agency (IEA) by region.

We now also estimate methane emissions for Energy, in addition to CO_2 emissions, which will provide a more comprehensive measure of absolute emissions. Reducing methane emissions would have a measurable short-term effect on climate change and is economically and practically easy to abate in many circumstances. BlueTrack tracks the emissions related to the combustion of fossil fuels for power generation, for which Methane and other greenhouse gases are not material.

New targets for Cement and Metals (Steel)

This year we have published 2030 targets for two new sectors: Cement and Steel (as a sub-sector in Metals). This document sets out information behind the new targets, including the reasons why we will we use company reported data in the model, rather than estimate the emissions like we do in Energy and Power.

We have not set a target for the Aluminium subsector of our Metals portfolio given the low materiality of the portfolio. Our exposure is predominantly through diversified mining companies where aluminium production is a small element of their overall activities. However, to aid transparency and further the discussion in this topic, we have detailed our approach to measuring emissions in this paper.

Updated benchmarks based on NZE scenario

The IEA has introduced an updated scenario in May 2021, IEA NZE2050, which achieves net zero CO_2 emissions by 2050 and models emissions consistent with limiting the global temperature rise to 1.5°C with a 50% probability.

We have begun to integrate this new scenario to derive our benchmarks set our 2030 targets, replacing the IEA SDS scenario we were previously using.

Overview of the BlueTrack™ methodology

The BlueTrack™ methodology comprises four main steps:

1. Constructing Paris-aligned portfolio benchmarks

The first step of our methodology is to use an external climate scenario to construct a Paris-aligned portfolio benchmark that defines how a given financing portfolio will need to reduce emissions over time.

When we released the first edition of this Whitepaper, the best available scenario to develop Paris aligned benchmarks for our financing portfolios was the International Energy Agency's Sustainable Development Scenario (SDS). SDS is aligned to a 1.7 degree world and is a roadmap for realizing net-zero CO_2 emissions in the Energy sector by 2070. The 2025 targets that we previously set for the Energy and Power sectors, informed by the SDS scenario, remain unchanged.

However, we are now setting new 2030 targets for the Cement, Steel, Energy and Power portfolios, informed by the IEA's Net Zero by 2050 Emissions Scenario (NZE).

Our ability to reduce our absolute financed emissions in this way gives us greater control in our ability to achieve our target, so we have set a specific or spot target for financed emission reduction in the Energy sector, rather than a range.

For Power, Cement and Steel, we have set emissions intensity targets and, as a result, we are setting target ranges. This reflects the reality that there are additional dependencies and variables outside our control that will determine the pace of the transition and therefore how quickly we are able to reduce our financed emissions intensity in these sectors.

These scenarios have been selected because they have been developed by a reputable external provider, are aligned with the Paris Agreement goals, and because they offer a sufficiently high-resolution dataset.

2. Quantifying client emissions

The second step of the methodology is to quantify the emissions produced by our clients to which we provide financing. The carbon emissions from a particular sector will vary depending on the nature of its activity, as well as the definition of the value chain boundary deemed in scope for emissions calculation.

GHG protocol defines emissions into three categories (Scopes):

- Scope 1 emissions are direct emissions e.g., arising from fuel burned by a company
- Scope 2 emissions are indirect emissions e.g., arising from the power or energy consumed by a company
- Scope 3 emissions are all other indirect emissions e.g., those arising from goods and services provided by the company

Given that companies typically operate across different parts of the value chain, a regimented definition of emissions according to scope may not always be appropriate.

Barclays aims to capture emissions across a defined set of business processes that capture the most material parts of the value chain and are consistent with the benchmark scenario.

For each sector, this involves setting boundaries to define the emissions a given company is responsible for, and then sourcing and processing data from a variety of internal and external sources to quantify those emissions.

We utilise company-reported emissions data and model emissions depending on the sector. For sectors where we have a large number of clients and where business operations typically spans across a varying part of the overall value chain, we estimate emissions directly using production level data. For sectors where we have a lower number of clients, we use company reported data and validate that it meets boundaries specified in the methodology.

In certain cases, the data or the modelled outputs are overriden using expert judgement, where there is a significant divergence from what is reported by the company and provided by our vendor, for example, where a company has divested a material asset but which is not yet reflected in the underyling data.

BlueTrack™ does not allow company-purchased offsets (e.g. carbon credits) to reduce emissions as we feel it is most important to focus a metric on operational activities under a company's control rather than rely on unrelated offsets (the availability of which may be limited). The methodology does allow company-operated removals i.e. on-site carbon capture at a plant, however, given this is currently marginal in the context of emissions, there is no impact on the metrics.

3. Attributing emissions to our financing

The third step of the methodology is to attribute client emissions to the financing provided. This involves defining the financing activities considered in-scope, determining how provided financing should be spread across the various business activities of diversified clients, and then appropriately linking each financing portion to the client's respective absolute emissions or emissions intensity metric.

We include both lending as at the reporting data and capital markets financing we have facilitiated in the prior 12 months to the reporting date.

All of our global lending activities, including off-balance sheet credit exposures, are considered in-scope across both the Corporate Bank and the Investment Bank. The majority of Barclays lending is in the form of Revolving Credit Facilities (RCF) which are typically undrawn, particularly in the Investment Bank. We use the total limit (i.e. maximum amount we are committed to finance under the facility) outstanding as of the reporting date.

We also considered using the drawn amount, Exposure at Default (EAD) or Risk Weighted Assets (RWA). There are arguments for using drawn amounts: they better reflect spot exposure and would form part of the company's liabilities. However, drawn amounts are typically much lower than the limit and using them would lead to carbon metrics that are overly dominated by the capital market financing we arrange for our clients. It would also expose carbon metrics to volatility at times of an increase in drawn amounts which cannot be controlled, it would not be informative for the management of our activity, and it may be related to the near-term liquidity needs of a company rather than investment in carbon-generative activities.

In addition to lending, our model considers debt and equity funding arranged in the capital markets as in-scope. This is a key element of our approach, and ensures that we are properly accounting for the breadth of support we provide our clients through our capital markets franchise. We use the amount arranged over the past 12 months prior to the reporting date which is pro-rated if there were several banks in the syndicate. Barclays is allocated 33% of the pro-rated financing amount, with the remaining proportion allocated to investors. We continue to monitor developments in the industry here incuding the PCAF consultation on Capital Market Instruments which we co-chaired in 2021.

Once company-level emissions metrics are calculated, those metrics need to be linked to the financing that we provide. For example, if we provide £100 in financing to a fossil fuel company, we need to determine what percent of their total financing £100 represents.

If a company straddles multiple sectors (e.g. has a subsidiary that extracts fossil fuels, and another subsidiary that generates power), the power generation subsidiary will be counted as part of the Power portfolio, and the fossil fuel extraction subsidiary as part of the Energy portfolio. This also means that we do not allocate companies into sectors based on arbitrary industry codes e.g. NACE, which do not tell the complete picture of a company's operations

There are no changes to the methodology relating to this attribution, however, we have clarified the treatment of green financing within the Power metric. We continue to monitor industry developments on this topic, notably PCAFs New Methods public consultation which sets out a bespoke treatment for green bonds.

4. Aggregating company-level measurements to a portfolio-level metric

The final step of the methodology is to aggregate company-level emission measurements and financing information into portfolio-level metrics. Barclays calculates three metrics:

1. Physical Intensity: how much CO_2 is released on average for a certain amount of economic activity or material produced
2. Absolute Emissions: is a measure of the absolute emissions generated, or fair share, of the company's emissions over time
3. Energy Mix: a secondary metric that measures the amount of financing we provide to coal, oil, gas or zero-carbon sources of energy.

We currently only set targets using the first two metrics.

When we set a target based on an emissions intensity metric, we recognise that it would in theory allow 'greening' a portfolio by keeping fossil fuel companies financing and adding green company financing to the portfolio, which would keep absolute emissions high. However, this logic would only apply in the short term, as the amount of green financing to be added in order to keep a portfolio in line with a 1.5°C scenario would soon become boundless (as the benchmark intensity gets closer to zero) and outside of what a bank can realistically capture as a fair share.

When we set a target based on an absolute emissions metric, we measure the share of emissions of our financing relative to the company's value. As such, an absolute measurement is subject to significant sources volatility. For example, any event that changes the company valuation of a client could increase or decrease the absolute emissions they contribute to our portfolio, despite no change in real-world emissions, because the financing increases or decreases relative to their total value.

The Energy Mix is a secondary metric used for reporting purposes only and provides a split of the financing we provide to each source of underlying energy, calculated in a way that is similar to the physical intensity metric. In particular, it considers the revenue a company derives from the relevant activity and does not consider the production volumes.

Our approach by sector
Energy

1.A. What metrics are used as benchmarks for the Energy sector and why?

1.A.1 Our model uses an absolute emissions metric to measure the performance of our Energy portfolio.

1.A.2 An absolute emissions metric is a measurement of the total quantity of greenhouse gases emitted by an entity over time. For example, if a company emits 10 tons of carbon dioxide this year, its absolute emissions measurement would be 10 tons.

1.A.3 We have chosen to use an absolute emissions metric because the energy sector cannot reduce its emissions intensity beyond a certain point (for example, burning a barrel of oil will always produce a similar quantity of emissions) and an emissions intensity metric will not capture the absolute reduction in production necessary for fossil fuel producers to be aligned with the Paris Agreement.

1.A.4 We recognise that many Energy companies are diversifying into alternative businesses, including renewable power generation. However, we capture the growth in renewable power through the Power metric so to align as closely as possible with the scenario benchmark.

1.A.5 We also estimate the Energy Mix as a secondary metric, based upon an estimate of the financing provided to each underlying energy source. However, given this metric is calculated on a revenue weighed basis and not a production-weighted basis, caution should be exercised when comparing it to the absolute metric or production-based benchmarks.

1.B. What scenarios are used for benchmark construction, and why?

1.B.1 When we released the first edition of this Whitepaper, the best available scenario to develop Paris aligned benchmarks for our financing portfolios was the SDS.

1.B.2 As a result, Energy was benchmarked against the SDS Fossil Fuel Production projection for the OECD with the absolute emission projection taken from the SDS scenario using fossil fuel production forecasts.

1.B.3 Since then, the IEA has released the NZE scenario which is more ambitious and realizes net-zero carbon dioxide (CO_2) emissions in the Energy sector by 2050 and is aligned with a goal to limit global temperature rises by 1.5 degrees with a 50% probability.

1.B.4 As a result we now benchmark Energy against the IEA's NZE World scenario which requires a c38% reduction in CO_2 from all energy-related sources by 2030.

1.B.5 Detailed production forecasts are not provided by the IEA so we have used the total emissions from energy as a suitable proxy. The scenario is not available at an OECD level, however, in the SDS scenario there was limited difference between the two benchmarks.

1.B.6 The IEA also separately publish a methane tracker which suggests that methane emissions can be reasonably reduced by c75% by 2030. When combined with CO_2, this represents a c40% reduction in emissions on a CO_2 equivalent (CO_2e) basis.

2.A. What scope of emissions are included, and why?

2.A.1 For the Energy sector, we include all companies that extract fossil fuels with all emissions associated with the extraction, downstream processing and use (Scope 1, 2, and 3) attributed to the extracting company. This is a key design choice as in reality most of the emissions related to a given unit of fossil fuels are released into the atmosphere during combustion, i.e. by the end user as part of Scope 3. This decision was made to recognise that both producers and consumers of fossil fuels are responsible for reducing the emissions that result. The direct and indirect emissions of a company's own operations (Scope 1 and 2) are also assessed.

2.A.2 The associated downstream emissions from midstream and downstream activities (excluding transportation and storage) are also now calculated and assigned to the extracting company within the latest methodology update.

2.B. What data is used for these calculations?

2.B.1 Company-level disclosure has improved significantly in recent years, particularly driven by the TCFD. Nonetheless, we continue to find that the data is still not sufficiently robust to be used as the primary source for BlueTrack™. Because of this, the methodology estimates company emissions by combining external fossil-fuel production databases with assumptions about emissions factors. This is similar to the approach used by the 2Dii PACTA methodology.

2.B.2 Fossil fuel energy content for Oil and Gas (MJ) and production for Coal (tonnes) is obtained from a specialist data provider: Asset Resolution, and converted into emissions using a variety of techniques depending on the fuel as shown 5.

2.B.3 As part of our commitment to enhance BlueTrack™, for the Energy sector we have advanced our approach this year to include greater granularity of scope 1 and 2 CO_2 energy intensity factors and as well an estimate of associated methane emissions. Previously our intensity factors were derived from the IEA and did not reflect specific company circumstances and methane was not included.

Approach to estimating intensity factors by fossil fuel

Oil

Oil forms a significant part of our portfolio and extraction technologies are very diverse. We use the OPGEE (Oil Production Greenhouse Gas Emissions Estimator) and the PRELIM (Petroleum Refinery Lifecycle Inventory Model) lifecycle assessment models to calculate Scope 1 and 2 emissions, which provides increased granularity of energy intensity, e.g. oil extracted from tar sands can be 3x more intensive than the global midpoint on a CO_2e basis. This is consistent with our sensitive sector policy requirements for oil sand producers.

OPGEE is a peer reviewed independent academic study and the model can provide estimates for CO_2 and methane both separately and on a combined (CO_2e) basis.

Gas

Extraction technologies for gas are less diverse and detailed studies of production intensity are less common. We use the National Energy Technology Laboratory (NETL) lifecycle assessment analysis to estimate CO_2 emissions factors which allows us to differentiate by extraction technology (conventional, unconventional, deepwater, CBM). Whilst NETL is a study of North American gas fields, we feel this methodology is suitable because the CO_2 component of gas extraction is reasonably consistent across geographies.

We use the IEA Methane Tracker to estimate methane at a country and extraction technology level. There can be a significant divergence in methane intensity at a country level and those with stronger regulations in place often observing far lower intensities than average, e.g. the intensity of Norwegian gas is on average c100x less intensive than the median and c1,000x less intensive than the most intensive country.

Coal

Detailed studies of coal intensity factors are less common again but generally form a much smaller part of the overall chain compared to oil and gas.

There is however, significant divergence in the energy (and carbon) content of different types of coal. As coal production from Asset Resolution is measured in tons rather than MJ, we first estimate the energy content and this can vary significantly according to the type of coal being extracted: lignite, subbituminous, bituminous, anthracite. We estimate using the mid-point of a range provided by the US Environmental Protection Agency (EPA).

We then estimate emissions from the energy content. CO_2 emissions do not vary strongly with extraction technology and are assumed to be 1% of lifecycle emissions as estimated by the EPA. Methane emissions, however, can be variable depending on the extraction method, for example, the average methane intensity of underground mines is c8x more intensive than surface mines. We assess methane from the Global Energy Monitor which follows the methodology developed by the Pacific Northwest National Laboratory and the EPA.

2.B.4 Emissions relating to fossil fuel extraction can vary significantly depending on the extraction method, region of production and operational processes.

2.B.5 Methane emissions vary significantly across regions, depending on the source. We source methane emissions through extraction technology and country data from the IEA methane tracker. These emissions are aggregated using Asset Resolution's production data.

2.B.6 We have specifically chosen not to use company reported data given the ongoing industry-wide challenges around methane measurement but instead estimate it ourselves. This approach calculates a level of methane inherent in our portfolio is then attributed to each company according to their production, technology and location mix of underlying assets.

2.B.7 We recognise this methodology is likely to show significant variances at the underlying company level given it does not reflect the underlying operations of each company which can lead to very different outcomes.

2.B.8 Utilising company disclosures (instead of an estimate) would pose a number of challenges around data sourcing and coverage, comparability and time consistency that we are not in a position to address in the short term. As a result, we intend to improve the quality of methane measurement in BlueTrack™ over the next year and beyond. Therefore, our approach to methane measurement will likely be updated in the future which may lead to recalculation of reported emissions.

Key criteria for assessing the GWP (Global Warming Potential) of methane

No	*Criteria*	*Description*	*Preferred measure*
1	**Comparability**	▪ The standard convention set out by the United Nations is to measure greenhouse gases using a GWP100 basis. ▪ Typically, companies disclose emissions on a GWP100 basis which also aligns to the approach adopted by our peers so would aid comparability across the industry. ▪ Some clients have started to disclose methane on a standalone basis although coverage is currently low.	GWP100
2	**Credibility**	▪ Methane is much more potent that CO_2 but is also much more short-lived (average life of 12 years) which makes it challenging to compare. ▪ The IPCC are currently debating the usefulness of a GWP20 given a GWP100 measure will underestimate the short-term impact of methane (and other short-lived gases).	GWP20
3	**Data quality**	▪ Data quality of methane is typically weaker than CO_2 given a significant proportion come from fugitive sources. ▪ Whilst a modelled estimate at a portfolio level will be reasonably accurate, it will be less so at a counterparty level where operating practices differ. ▪ A GWP100 measure will reduce the overall impact of methane in the portfolio, thus reducing the reliance on poor data.	GWP100

2.B.9 We acknowledge that CO_2 and methane have different warming characteristics and aggregating them requires the use of assumptions. However, given the data quality issues we have decided to aggregate it into a CO_2e measure using a standard GWP100 approach which is widely used by the company reporting, although it is recognised that it underestimates the impact of methane over a shorter time period (e.g. to 2050). The table above describes the key criteria that have guided our selection.

2.B.10 Scope 3 CO_2 emissions factors are estimated using the annual emissions and annual production levels as reported from the IEA. The table on the right shows the derivation from the IEA World Energy Outlook 2019 at World level, as of 2021.

2.B.11 For the companies with substantial footprints that do disclose emissions (generally at parent company level, with limited break-down per activity or per subsidiary), available disclosures are used to check and, where appropriate, override the value calculated from production data.

Derived emissions factors from the IEA for fossil fuels

Technology	*Annual Emissions (Mt CO_2)*	*Annual Production (Mtoe)*	*Emissions Factor (kg CO_2/MWh)**
Coal	14,554	3,907	**320**
Oil	11,239	4,686	**206**
Natural Gas	6,735	3,457	**168**

* Emission factors for fossil fuels have been converted into MWh for consistency with Power emission factors.

2.B.12 Data coverage is expected to be adequate at 80-90% of Barclays' financing as of December 2021. This is driven by better data coverage for the larger borrowers and across clients of the Investment Bank vs. lower coverage in smaller borrowers and in clients of the Corporate Bank. Over time, we will look to increase data coverage to a target of 90% of financing, driven by improved coverage by third-party providers, improved company disclosures, and client outreach.

3.A. What financing activities are considered in-scope, and why?

3.A.1 All financing activities as shown on page 3 are in scope. Notably, there is currently no framework in place for green financing for the Energy sector as our current policies (see page 11) do not deem them eligible for dedicated purpose green financing.

3.B. How is provided financing linked to company-level emissions metrics?

3.B.1 When calculating our 'fair share' of a company's absolute emissions, we use financing provided as a proportion of book value of total debt and equity (taken directly from the company Balance Sheet). We have enhanced the approach this year to include adjustments in-line with the Partnership for Carbon Accounting Financials (PCAF): negative equity is not included (only the total debt is used in that case), and when either debt or equity is not known, the total assets is instead used. However, there remain other differences with the methodology outlined by PCAF.

3.B.2 We are cautious about using the more traditional measurement of enterprise value, as it relies on market capitalisation, which can create volatility. Everything else being equal, Barclays' absolute emissions would increase if a company's stock price falls (and vice versa). In addition, Enterprise Value (EV) uses debt net of cash, which is why PCAF recommends using Enterprise Value Including Cash, which is increasingly becoming the norm. Using this would not be consistent with the definition of 'financing' and would lead to the equity and debt holders owning more than 100% of a company's emissions.

3.B.3 We are aware that an undrawn commitment does not form part of a company's balance sheet value. It is nonetheless included in exposure in our model as it is a better reflection of the balance sheet commitment we make. This leads to an over-allocation of emissions to Barclays vs. other funders of a company but is relatively immaterial when allocating an ownership share to Barclays given most companies multi-bank and have a large book value of debt and equity.

3.B.4 In cases where we do not have production data to compute an emissions metric at a company level, we assume the financing is provided directly to the Parent.

3.B.5 To minimise potential understatement of our emissions, values for Upstream companies without data are estimated. For the portion of the Energy portfolio for which the production data is not available at the Parent level, but where we would expect there to be (i.e. the company is an Upstream company), the absolute emissions are estimated based on the portfolio average (of the sub-sector). This will also avoid a change in the metric due to an expansion in coverage that would not be reflective of a change in Barclays portfolio emissions profile.

4.A. How are client-level measurements aggregated for the Energy portfolio?

4.A.1 For all relevant portfolios, total absolute emissions are calculated as a simple sum of Barclays' 'fair share' of each company's absolute emissions.

Key choices to calculate the absolute metric

Key choice	*Description*
Sector boundary	Upstream Energy
Company emissions	Total CO_2e Scope 1, 2 and 3 emissions
Scope 1 and 2	Derived from OPGEE and PRELIM lifecycle assessment models for Oil; NETL lifecycle assessment analysis for Gas and IEA Methane Tracker; and EPA for energy content and CO_2 estimates; Global Energy Monitor for methane Checked against company disclosure, for material cases, if available
Scope 3	Derived from Asset Level Fossil Fuel Extraction (tonne of fuel), Energy Content of each fuel type (KWh per tonne) and global carbon emission factors for Oil and Gas (CO_2 per KWh). Derived from EPA for Coal. Checked against company disclosure, for material cases, if available
Barclays financing	Financing provided or arranged
Company value	Total Debt and Equity
Treatment of missing production data	For the portion of the portfolio for which the production data is not available, the absolute emissions are estimated based on the portfolio average

Our approach by sector
Power

1.A. What metrics are used as benchmarks for the Power sector and why?

1.A.1 For Power Generation, we consider emission intensity to be the primary emission metric given that a reduction in the carbon intensity of electricity (via a switch to renewable or nuclear sources) is the key driver of decarbonisation pathways for the sector.

1.A.2 Emissions intensity metrics provide a view of the decarbonisation progress made by a company or sector over time. When transitioning, companies will need to invest in greener activities, which would be captured using an intensity metric but not necessarily an absolute metric.

1.A.3 We also use the Energy Mix as a secondary metric, with an estimate of the financing provided to each underlying energy source used as the mix.

1.B. What scenarios are used for benchmark construction, and why?

1.B.1 When we released the first edition of this Whitepaper, the best available scenario to develop Paris aligned benchmarks for our financing portfolios was the SDS (see above).

1.B.2 As a result, Power Generation was benchmarked against the SDS electricity generation pathway for the OECD as the most appropriate benchmark, given that it is mostly a regionalised activity.

1.B.3 We now also benchmark Power against the IEA's NZE World scenario which requires a c69% reduction CO_2 intensity at a World level by 2030 which represents the higher reduction in emissions in our target range. The IEA do not yet publish further geographic granularity in order to set a benchmark at an OECD level however, we would expect that the OECD would require a faster rate of decarbonisation than the global average.

1.B.4 The intensity in both cases is derived by dividing the electricity total emissions by the electricity generation.

2.A. What scope of emissions are included, and why?

2.A.1 For the Power sector, we attribute to each company the emissions that result from combusting fossil fuels to produce electricity (Scope 1). In the case of renewable and nuclear power, as no combustion is required, the emissions are zero.

2.A.2 The methodology does not consider the Scope 2 emissions of the sector given their marginality in the context of electricity generation.

2.A.3 Scope 3 emissions for the Power and Utilities sector generally comprise the upstream emissions from fossil fuel extraction, the upstream purchase of power from upstream generation companies and the downstream combustion of natural gas transported to final consumers e.g. for residential or commercial heating.

2.A.4 Upstream scope 3 emissions are either captured in the Energy metric or where we lend directly to the power generator itself (as a Scope 1 emission) with the downstream emissions likely being accounted for in the Scope 1 emissions of end users as we expand the number of sectors covered by the model.

2.A.5 The source of the upstream coal and gas can have a material impact on lifecycle emissions of power generation, but there is limited data on power supply chains in order to provide an assessment at this stage. Given we also value the simplicity in only assessing combustion emissions and its close relation to the scenario benchmark, we continue to model for CO_2 only in this sector and capture the upstream methane in the Energy metric.

2.B. What data is used for these calculations?

2.B.1 Company-level disclosure has improved significantly in recent years, particularly driven by the TCFD. Nonetheless, we continue to find that the data is still not sufficiently robust to be used as the primary source for BlueTrack™. Because of this, we continue to estimate emissions using emissions factors and asset utilisation rates. In addition, we conducted a benchmarking study shown on page 11 which shows the inconsistency we observe in company reported disclosures.

2.B.2 The electricity capacity data used is obtained from a specialist data provider: Asset Resolution.

2.B.3 For Power companies, electricity production capacity is typically not fully utilised; we estimate the actual production by applying a utilisation factor derived from IEA data for each fuel type and region. The estimated production is converted into Scope 1 emissions using the IEA carbon content of each fuel type. The tables on the next page show the capacity and intensity factors that are derived from the IEA World Energy Outlook at a World and OECD level respectively.

Power continued

Derived capacity factors from the IEA for power generation			
Technology	*Annual Electricity Generation (TWh)*	*Generation Capacity (GW)*	*Capacity Factor*
Coal	10,431	2,133	**56%**
Oil	788	409	**22%**
Natural Gas	6549	1,910	**39%**
Nuclear	2,769	418	**76%**
Hydro	4,434	1,353	**37%**
Bioenergy	749	165	**52%**
Other Renewables	2,878	1,564	**21%**

Derived emissions factors from the IEA for Power			
Technology	*Annual Emissions (Mt CO_2)*	*Annual Electricity Generation (TWh)*	*Emissions Factor (kg CO_2/MWh)*
Coal	2,586	2,693	**960**
Oil	127	170	**747**
Natural Gas	1,317	3,209	**410**

Benchmarking study

BlueTrack™ calculates emissions from asset-level data, rather than relying solely on reported data, in order to get a comparable and consistent view across companies. For some inputs we use fallbacks and averages, e.g. capacity factors, which can lead to uncertainty in the outputs.

We have begun to assess the performance of BlueTrack™ calculated physical intensities against those estimated by companies. This has helped us to identify the extent of variations and potential reasons which could contribute to these differences, but it has also given us an insight into whether we can directly use company reported emissions or continue using the current bottom-up approach.

For our analysis, we have begun to develop an uncertainty metric which measures a range of uncertainty around the counterparty and portfolio level results calculated by BlueTrack™. We ran a Monte Carlo simulation for a variety of the model inputs and set the uncertainty measure at a 95% confidence level.

We then back-tested the uncertainty metrics by sampling companies in the Power sector and observing whether the reported intensities lie within or outside the confidence intervals, and then investigated companies which were outside our expected range.

The portfolio intensity calculated using reported data was within the range of uncertainty due to the averaging effect of the calculation, however, at a company level only c.55% were within the range of uncertainty calculated at the company level.

The key reason for variances being high at a company level is the lack of standardisation in the way companies report emissions. We identified a number of areas where disclosure differences can vary from one power company to another – whilst it is difficult to estimate the impact of each difference, we have determined that the most material factors are likely to be:

- The reporting basis used by companies: BlueTrack™ uses data from Asset Resolution which apportions production on an equity basis. However c.40% of companies in our sample used a control basis to calculate emissions
- The scope of emissions: BlueTrack™ calculates Scope 1 emissions from power generation. However, at least 25% of companies in our sample calculate intensity based on Scope 1 and 2 emissions, including cases where Scope 2 emissions represent a higher proportion of the total as a result of other activities not related to power generation.
- Purchased vs. own-generation: BlueTrack™ calculates emissions based on own-generated power. However, we observed a number of companies that report intensity on a final supply basis, which can also be on a gross or net (of own-company use) basis

We also observed that approximately a third of companies restated their 2019 emissions in 2020 due to a change in emission calculation methodology, the inclusion of new emissions or other reasons.

At a portfolio level, we have concluded that the physical intensity calculated by BlueTrack™ appears in line with that calculated by companies' reported intensities. However, variances exist at a company level which is where we remain cautious. While it is evident that multiple factors contribute to variances at individual company level in varying proportions, no factor could be singled out that causes a large variation.

We continue to use bottom-up emissions estimates for Power companies given issues around coverage (although this will likely continue to improve in near-term), the consistency issues described above and a lack of granularity of company disclosures i.e. emissions are typically not available at a legal entity level.

2.B.4 We recognise that this approach makes use of simplifying assumptions, and that both emissions factors and utilisation rates will vary from the IEA averages used on a company-by-company basis. For example, certain countries in which Barclays' clients operate have regulations in place to limit the use of coal fired power plants where lower carbon assets (renewable, gas) are installed, which impacts its capacity utilisation. Renewable power asset utilisation is naturally limited by weather trends i.e. requirements for wind/sun, which will vary by geography. Emissions factors may vary due to asset efficiency – two different coal-fired power plants may generate different amounts of electricity per tonne of fuel combusted – or variance in end use, given, for example, that not all fossil fuels produced are combusted, and instead go to chemical, plastic, or fertiliser production.

2.B.5 Furthermore, these emissions factors and utilisation rates are only available with a one-year lag. For example, the rates used for the 2020 and 2021 reporting points will be the regional averages from 2019 and 2020 respectively which has meant that developments such as the lower average wind speeds leading to higher use of fossil fuels in 2020 are not reflected in the estimate. Furthermore, energy supply pressures could be exacerbated by the conflict in Ukraine which could create a gap between the real world usage and the estimation approach.

3.A. What financing activities are considered in-scope, and why?

3.A.1 All financing activities as explained on page 3 are in scope. In addition, certain financing activities in the Power sector (loan facilities or capital market transactions) are specifically flagged as 'Green' and assumed to have a zero intensity if the proceeds are primarily used for renewable electricity generation.

3.A.2 We use Barclays Sustainable Finance Framework to identify activities as Green, where the dedicated purpose of financing is Electricity Generation. See the below link for more detail:

https://home.barclays/content/dam/home-barclays/documents/citizenship/ESG/Barclays-Sustainable-Finance-Framework-2020.pdf

Power continued

3.A.3 All the relevant proceeds as per the terms of the arrangement are assumed to be for power generation. For example, if we provide £100 of dedicated financing for a company to generate renewable power, the entire £100 of financing would be assigned a zero intensity and included in the emissions intensity metric regardless of how much revenue the company generates from power generation. We acknowledge that this approach could lead to a small double-count in the benefit from renewable production which may become more material over time. As a result, we are reviewing our approach including a review of alternative methods such as the approach outlined in the PCAF Green Bond consultation.

3.B. How is provided financing linked to company-level emission metrics?

3.B.1 If financing is provided to a Power company, our model splits financing across its businesses according to the division of that company's revenue (as per S&P Trucost, subject to fall-back provisions). This means that if Barclays has arranged a £100m bond and provided a £50m RCF to a company that derives only 10% of its revenue from power generation, only £15m in financing will be included in the Power portfolio intensity calculations (before applying a 33% weighting). This is particularly important to ensure accurate accounting where we have exposure to large companies with relatively small Power businesses, although it could make it difficult for third parties to reconcile our emission disclosure with our financial disclosure.

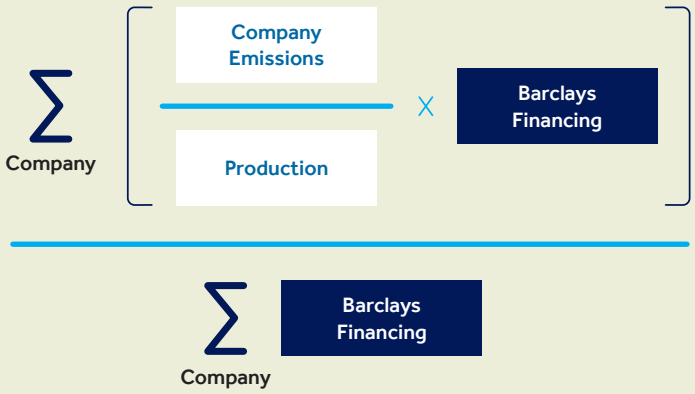
3.B.2 Where granular revenue data is not available, a standard matrix based on the sector classification of the producer (Barclays Industry Classification or 'BIC' code) will be used. We have enhanced this matrix this year such that a number of BIC codes for Power Utilities companies have been categorised from Power Generation to Power Distribution. The revenue share of companies with a Power Distribution BIC code has been configured with a different fallback (25%) to reflect the contribution of their transmission and distribution operations. The below table shows the fallbacks adopted.

Standard Revenue Adjustment Matrix

Sector	*Sub Sector*	*Production Primary*	*Production Other*	*Revenue Share Primary*	*Revenue Share Other*
Power	**Generation**	Power	–	100%	0%
		Power	N types	75%	25% / N
		–	N types	0%	25% / N
	Distribution	Power	–	25%	0%
		Power	N types	25%	25% / N
		–	N types	0%	25% / N

4.A. How are client-level measurements aggregated for the Power portfolio?

4.A.1 For the Power portfolio, emission intensity is calculated as a function of each company's emissions and energy produced. The portfolio metric is then tabulated as an average weighted value using proportion of total portfolio financing.



Key choices to calculate the intensity metric

Key choice	*Description*
Sector boundary	Power Generation
Intensity type	Physical intensity (CO_2 emissions per unit of energy produced), expressed in $KgCO_2$ / MWh
Company emissions	Total CO_2 Scope 1 emissions
Scope 1	Derived from Asset Level Capacity, Capacity Utilisation per fuel type and Emission Factors Checked against company disclosure, for material cases, if available
Scope 2 and 3	n.a.
Energy produced	Derived from Asset Level Capacity, Capacity Utilisation per fuel type
Barclays financing	Financing provided or arranged. The share of a company's financing that relates to electricity generation is used (the rest is excluded). This is estimated by using the share of revenue that the client derives from those activities.

Our approach by sector
Cement

1.A. What metrics are used as benchmarks for the Cement sector and why?

1.A.1 Our model uses an an emissions intensity metric to measure the performance of our Cement portfolio.

1.A.2 We have selected an emissions intensity metric because a reduction in the carbon intensity from manufacturing processes, through an increase in efficiency and investment in technology, are the key drivers of decarbonisation for this pathway, rather than a reduction in the products' use.

1.B. What scenarios are used for benchmark construction, and why?

1.B.1 The emissions benchmark for our cement portfolio is taken from the IEA's World NZE scenario, which is combined with forecast production volumes. The higher end of the 2030 target range is taken from the IEA's NZE World scenario. Regional granularity is not available in this scenario. In addition, Cement is an essential building block of economic / infrastructure development and the IEA pathways do not predict a rapid reduction in its usage.

1.B.2 Cement is a hard to abate sector because most of the emissions generated are a result of process emissions which cannot be avoided if cement production is to continue, i.e. direct emissions occur through a chemical process of calcination. The manufactoruign process also generates emissions from burning fossil fuels to produce clinker with production highly energy intensive and tends to rely heavily on coal.

To achieve a net zero pathway by 2050 reduction levers can be split into two-time periods.

- From present day until 2030, there are near-term levers for reducing sector emissions from cement, but these result in small reductions e.g. clinker substitution by reducing the clinker-to-cement ratio.
- From 2030 to 2050, the levers are driven by investment and implementation of technology that is currently under development, and likely to lead to substantial emissions reduction. For example, carbon capture, utilisation and storage (CCUS) technology will play an important role in reducing emissions from various industries, especially in the Cement sector, but scalability is a currently a key challenge.

1.B.3 The IEA only produce granular forecasts for the direct emissions associated with the manufacturing of cement and do not provide forecasts for the electricity generated for this purpose, either on-site on through the grid. The NZE scenario also does not provide production forecasts for the NZE scenario and as a result, we have had to make some assumptions to infer an intensity metric such that it aligns to the reporting boundary.

2.A. What scope of emissions are included, and why?

2.A.1 For the Cement sector a fixed boundary system for the manufacturing sector is used where we measure all emissions from an integrated cement plant, which are typically Scope 1 and 2 emissions. This includes thermal combustion for the production of clinker, electricity generation for the kiln, and the grinding and blending of materials.

2.A.2 We chose this boundary because a significant proportion of the emissions for these sectors are produced during the manufacturing process.

2.A.3 The methodology does not include emissions from the extraction and crushing of limestone and other raw materials used in the production or transportation of cement products, which are typically Scope 3.

2.A.4 As we use company reported data, all greenhouse gases are typically included in company estimates. However, CO_2 is the most material gas by far for the sector.

2.B. What data is used for these calculations?

2.B.1 Given the small number of clients we have in the sector and that most of them disclose sufficient emissions and production data, we utilise company reported data to calculate emissions intensity.

2.B.2 In certain situations, where we feel company data does not align to the reporting boundary, we use data from company disclosures in combination with vendor provided numbers. Where the client data is not available or not consistent with scope requirements, production and emission intensity are sourced from Asset Resolution.

3.A. What financing activities are considered in-scope, and why?

3.A.1. All financing activities as explained on page 3 are in scope. There is currently no framework in place for green financing for the Cement sector as our current policies (see page 11) do not deem them eligible for dedicated purpose green financing as we exclude carbon intensive industries.

3.B. How is provided financing linked to company-level emission metrics?

3.B.1 Once company-level emissions metrics are calculated, those metrics need to be linked to the financing that we provide. We approach this In the same way as the Power metric as described on page 12.

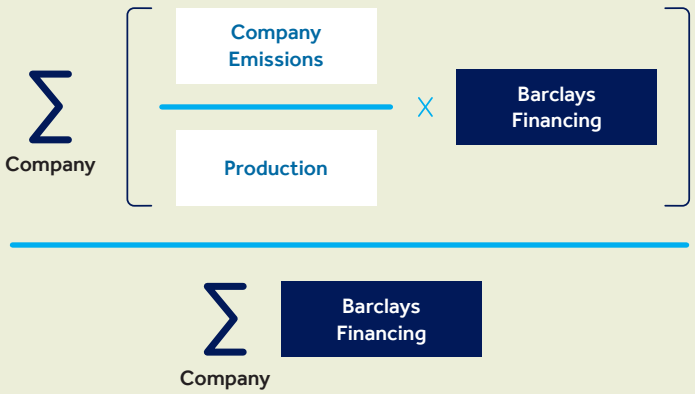
3.B.2 The below fallback table is used where revenue share data is not available.

Standard Revenue Adjustment Matrix

Sector	*Sub Sector*	*Production Primary*	*Production Other*	*Revenue Share Primary*	*Revenue Share Other*
Cement	**Cement**	Cement	–	100%	0%
		Cement	N types	75%	25% / N
		–	N types	0%	25% / N

4.A. How are client-level measurements aggregated for the Cement portfolio?

4.A.1 For the Cement portfolio, emission intensity is calculated as a function of each company's emissions and tonnes of cement produced. The portfolio metric is then tabulated as an average weighted value using proportion of total portfolio financing.



Key choices to calculate the intensity metric

Key choice	*Description*
Sector boundary	Cement Manufacturing
Intensity type	Physical intensity (CO_2e emissions per tonne of cement produced), expressed in $MtCO_2e$/MtCement
Company emissions	Total CO_2e Scope 1 and Scope 2 emissions
Scope 1 and 2	Derived from client reported data, but adjusted where necessary to align within fixed boundary
Scope 3	na
Cement produced	Production volumes from client reported data
Barclays financing	Financing provided or arranged. The share of a company's financing that relates to in scope activities. This is estimated by using the share of revenue that the client derives from those activities.

Our approach by sector
Metals

1.A. What metrics are used as benchmarks for the Metals sector and why?

1.A.1 Our model uses an an emissions intensity metric to measure the performance of our Steel portfolio.

1.A.2 We have selected an emissions intensity metric because a reduction in the carbon intensity from manufacturing processes, through an increase in efficiency and investment in technology, are the key drivers of decarbonisation for this pathway, rather than a material reduction in the products' use.

1.A.4 Whilst we have not set a target for aluminium, we would also use an emission intensity metric to measure our performance should our exposure become more material for similar reasons as above.

1.A.5 We do not deem it appropriate to combine steel and aluminium together as the products have very different end uses, are produced with different manufacturing processes and have different decarbonisation pathways.

1.B. What scenarios are used for benchmark construction, and why?

1.B.1 The emissions benchmark for our steel portfolio is taken from the IEA's World NZE scenario, which is combined with forecast production volumes. The higher end of the 2030 target range is taken from the IEA's NZE World scenario. Regional granularity is not available in this scenario. Steel is an important construction and building material, and as the need for buildings and infrastructure continues to grow globally, reducing steel-related emissions is crucial for future sustainability.

1.B.2 To reduce emissions, the steel industry requires a push towards the use of EAF alongside increased use of scrap and DRI, although this requires the availability of renewable electricity and of high-quality steel scrap. Steel is a hard to abate sector where the technology needed is not readily available today. Steel can be produced via two main processes, using an integrated blast furnace / basic oxygen furnace (BOF) or an electric arc furnace (EAF). Integrated producers create steel from iron ore and need coal as a reductant, EAF producers use steel scrap or direct reduced iron (DRI) as their main raw material.

1.B.3 The IEA only produce granular forecasts for the direct emissions associated with the manufacturing of steel and do not provide forecasts for the electricity generated for this purpose, either on-site on through the grid. The NZE scenario also does not provide production forecasts for the NZE scenario and as a result, we have had to make some assumptions to infer an intensity metric such that it aligns to the reporting boundary. Steel producers could use biomass as an alternative fuel to reduce CO_2 emissions. However, a key limiting factor is that biomass, such as dried sugar, is not readily available globally at the level required to reduce carbon emissions on a significant scale.

1.B.4 We are also following the Net Zero Steel Initiative (NZSI), which works together with the steel industry, alongside other partners, including the finance sector, to put the sector on a pathway to net-zero emissions by 2050.

1.B.5 To reduce emissions, the aluminium industry requires a transition away from fossil fuel electricity generation toward more renewable sources and greater use of secondary production via increased recyclability. To meet the sustainable development pathway (IEA SDS, 2020) the majority of emissions from electricity use must be decarbonised at a fast rate (global reduction of c.50% by 2030).

2.A. What scope of emissions are included, and why?

2.A.1 Most of the emissions generated in the manufacturing of steel come from iron making (from iron ore), steelmaking and in the preparation of materials e.g. steel production uses coke and involves high temperature combustion resulting in a large amount of emissions.

2.A.2 Steel production can be broken down into primary and secondary production, where the latter is considerably less energy intensive, although the availability of scrap may not be sufficient to meet demand.

2.A.3 We use a fixed boundary system for the steel sector where we measure all emissions from the midstream operations of a steel plant's manufacturing activities, which are typically Scope 1 and 2 emissions. We attribute all emissions from a steel plant, including coal coking, iron ore sintering, hot metal production, and crude steel production.

2.A.4 We chose this boundary because a significant proportion of the emissions for these sectors are produced during the manufacturing process.

2.A.5 The methodology does not calculate emissions from the rolling and casting of steel and emissions from raw material extract (iron ore or coke) or the steel product's lifecycle use, which are typically Scope 3 in many cases.

2.A.6 Aluminium production can also be broken down into primary and secondary processes. Primary aluminium production is highly energy intensive, created via an electrolytic reduction reaction in a smelter which requires large amounts of electricity consumption, whereas secondary e.g. aluminium produced from recycled metal, requires a comparably small amount of energy to produce and costs less, however its use is constrained by scrap availability.

2.A.7 For the Aluminium sector, we would set the boundary as the emissions generated through activities involving the refining of alumina and the production of both primary and secondary aluminium, which will typically cover Scope 1 and 2 emissions. It will include Scope 3 emissions where companies purchase alumina. Aluminium company emissions are split into three broad production processes: Alumina refining, primary production (the process through which new aluminium is made) and secondary production (the process in which existing aluminium scrap is recycled into aluminium that can be used again).

2.A.8 As we use company reported data, all greenhouse gases are typically included in company estimates. However, CO_2 is the most material gas by far for the sector.

2.B. What data is used for these calculations?

2.B.1 Given the small number of clients we have in the sector and that most of them disclose sufficient emissions and production data, we utilise company reported data to calculate emissions intensity in the steel sector.

2.B.2 In certain situations, where we feel company data does not align to the reporting boundary, we use data from company disclosures directly in combination with vendor provided numbers. Where the client data is not available or not consistent with scope requirements, production and emission intensity are sourced from Asset Resolution.

2.B.3 Asset Resolution data is not available for Aluminium, so estimates would be required if companies do not disclose production and emissions directly using company disclosed information (such as fuel source and electricity use by country).

3.A. What financing activities are considered in-scope, and why?

3.A.1 All financing activities as explained on page 3 are in scope. There is currently no framework in place for green financing for the Steel sector as our current policies (see page 11) do not deem them eligible for dedicated purpose green financing.

3.B. How is provided financing linked to company-level emission metrics?

3.B.1 Once company-level emissions metrics are calculated, those metrics need to be linked to the financing that we provide. We approach this in the same way as the Power metric as described on page 12.

3.B.2 The below fallback table is used where revenue share data is not available.

Standard Revenue Adjustment Matrix

Sector	*Sub Sector*	*Production Primary*	*Production Other*	*Revenue Share Primary*	*Revenue Share Other*
Metals	**Metals**	K types	–	100% / K	0%
		K types	N types	75% / K	25% / N
		–	N types	0%	25% / N

4.A. How are client-level measurements aggregated for the Metals portfolio?

4.A.1 Emission intensity is calculated as a function of each company's emissions and tonne of metal produced. The portfolio metric is then tabulated as an average weighted value using proportion of total portfolio financing.

$$\frac{\sum_{\text{Company}} \left[\frac{\text{Company Emissions}}{\text{Production}} \times \text{Barclays Financing} \right]}{\sum_{\text{Company}} \text{Barclays Financing}}$$

Key choices to calculate the intensity metric

Key choice	*Description*
Sector boundary	Metals manufacturing
Intensity type	Physical intensity (CO_2e emissions per tonne of cement produced), expressed in $MtCO_2e$/MtMetal
Company emissions	Steel: CO_2e from some production activities (typically Scope 1 and 2)
Scope 1 and 2	Derived from client reported data, but adjusted where necessary to align within fixed boundary
Scope 3	na
Metals produced	Production volumes from client reported data
Barclays financing	Financing provided or arranged. The share of a company's financing that relates to in scope activities. This is estimated by using the share of revenue that the client derives from those activities..

Known areas for future enhancement

Barclays recognises that while this is a second iteration of the methodology, there are several areas that will require further enhancement and refinement over time. There is no consistent industry-wide approach to measuring emissions and approaches continue to evolve. We believe that industry co-operation, particularly in setting common standards and transparent reporting, is important for our stakeholders. We continue to engage with peers, industry experts and academics to assess the transition to a low-carbon economy and consider emerging methodologies and taxonomies. As a result, we continue to evolve our approach and welcome the continuing industry efforts to converge on a common standard. Known limitations include:

5.A. Calculation granularity

As company disclosures continue to improve, not least as a result of the TCFD guidelines, we are hopeful that this source of data will become sufficiently robust to play a much greater role in the calculation of BlueTrack™ metrics. This would allow us to account more easily for regional capacity factors, global carbon intensity factors and other GHGs.

In particular, we recognise that our approach to estimating methane is not sufficient to be tracked at a counterparty level given the difficulties that the industry faces in measuring emissions at this stage.

5.B. Data quality, including precision, coverage, matching and recalculations

Climate data, models and methodologies are evolving and not yet at the same standard as more traditional financial metrics nor subject to the same or equivalent disclosure standards, historical reference points, benchmarks or globally accepted accounting principles. Most of our data is collected from external sources and the quality and methodologies relating to the underlying data can be hard to assess. External sources then require mapping to Barclays' internal data. Whilst we have set a framework that facilitates a robust matching process it is likely that residual issues will remain, including, mergers and acquisitions which can blur any recalculation of a starting point.

Asset Resolution is our key data source. Whilst it has strong coverage across our key markets (US and Europe), it is not complete in more developing parts of the world, and does not include all sectors. There will also be cases, such as oil production owned by sovereign states, which are not captured within BlueTrack™ given the difficulties in assigning Barclays fair share of the associated emissions.

Data coverage issues are of primary importance when calculating absolute emissions as it is a sum but less important for the other metrics which are weighted averages. This is partially mitigated as larger clients also tend to have better quality data. These issues will need to be clearly addressed as part of the disclosure to aid transparency to the market.

There are also issues with lags as most of our data is not available as at the reporting date. This is particularly important where we estimate the utilisation of power plants that can be impacted by many events such as rapid changes in fuel prices, geopolitical events and weather patterns.

For sectors where we rely on company disclosed emissions, such as Cement and Metals (Steel), there are challenges around the granularity, consistency and transparency across data which may lead to inconsistencies in our metrics. Where we source data from company disclosures, our approach is to use the most recent reliable inputs.

We will continue to enhance and refine BlueTrack™ over time, including as climate data quality improves and as company disclosures become more granular. We may re-perform estimates by enhancing those estimates with the improved data that subsequently becomes available.

5.C. Company-level forecasting/ commitments

Through public company commitments and our client relationships we are often aware of climate-related commitments clients have made, and we would like to reflect these in our approach over time.

5.D. Metrics

BlueTrack™ currently only calculates physical intensity, absolute emissions and energy mix. We do not calculate an aggregated metric across sectors given the significant double-count of emissions across sectors, nor a temperature alignment metric.

We also feel that given the inherent uncertainty in emissions calculations that it is important to develop a metric which estimates the level of uncertainty at a portfolio level. We have developed a prototype approach to assess the uncertainty which we intend to enhance during 2022.

5.E. Other sectors

Whilst we would expect to report emissions on our entire financing portfolio over time, BlueTrack will ultimately cover the most important sectors. In line with the NZBA's commitment statement, our initial targets focus on priority sectors where the bank can have the most significant impact, i.e. the most GHG-intensive sectors within their portfolios. We will include targets for Automotive Manufacturing and Residential Real Estate in time for the 2022 Annual Report.

We will prioritise the extension of our approach to other sectors by considering, among other things, the magnitude of emissions from a sector, the amount of business that Barclays does in that sector, the feasibility of emissions reduction using existing technology, and the availability of emissions data.