# HSBC Holdings plc

# Financed Emissions Methodology

22 February 2022

HSBC

# Introduction

This technical supplement provides further detail on the financed emissions baselining and target setting for the oil and gas, and power and utilities sectors, that we have carried out for the portfolio alignment capability built by HSBC. The analytics sit alongside other purpose-built models and frameworks for stress testing and risk management, and enables us to measure and evaluate the progress we are making towards our ambition to align HSBC's financed emissions to net zero by 2050 at the latest.

Our framework for analysing our Scope 3 financed and facilitated emissions reflects industry recommendations, including guidance from the Glasgow Financial Alliance for Net Zero ('GFANZ'), the Net Zero Banking Alliance ('NZBA'), the Financial Services Taskforce ('FSTF'), the Task Force on Climate-related Disclosures ('TCFD'), the Portfolio Alignment Team ('PAT'), and the Partnership for Carbon Accounting Financials ('PCAF'). Our analysis of financed emissions considers on-balance sheet financing, including project finance and direct lending, as well as financing we help clients access through capital markets activities. Given the different nature of these two forms of financing, we distinguish between 'on-balance sheet financed' and 'facilitated' emissions where necessary in our reporting.

The methodology and data used to assess financed emissions and set targets is new and evolving, and we expect industry guidance, market practice, and regulations to continue to change. We plan to refine our analysis using the data sources and methodologies available for the sectors we analyse, including, among others, the Science Based Targets initiative ('SBTi') and the Paris Agreement Capital Transition Assessment ('PACTA') methodology.

Financed emissions link the financing we provide to our customers and their activities in the real economy, helping to provide an indication of the greenhouse gas ('GHG') emissions associated with those activities. They form part of our Scope 3 emissions, which includes emissions associated with the use of a company's products and services. We define 'counterparty' as being an individual counterparty to a loan or transaction and "counterparty group" as being a group of connected counterparties.

For further details of our approach to assessing financed emissions and target setting, see our *Net Zero Aligned Finance Approach Update* at www.hsbc.com/who-we-are/esg-and-responsible-business/esg-reporting-centre.

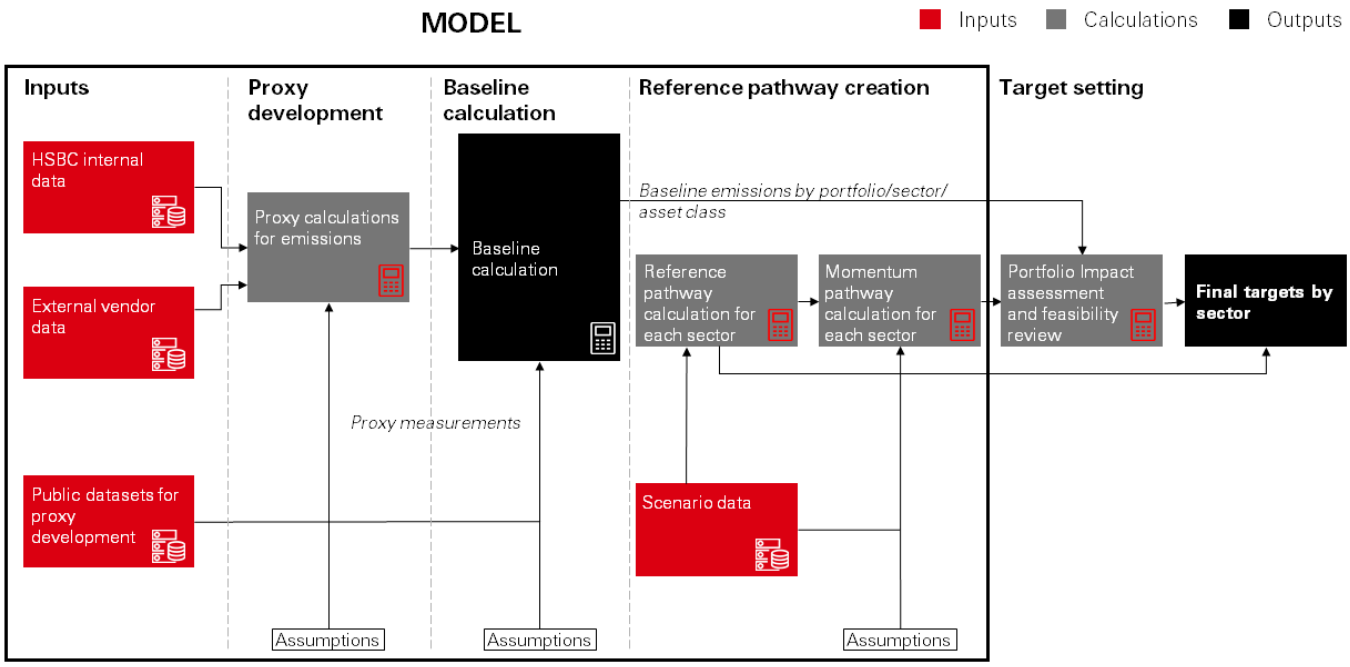
We have adopted a three-step methodology to the judgements defined by industry recommendations[1] for comparability and transparency (see Table 1). The rationale for our methodological choices is set out on the following pages of this document.

[1] Task Force for Climate-related Financial Disclosures (2021), Measuring Portfolio Alignment: Technical Report.

Table 1 - Methodological approach

| Methodological Step | Key Judgement | HSBC Methodological choices |
|---|---|---|
| Step 1: Translating scenario-based carbon budgets into benchmarks | 1. What type of benchmark should be built? | Single scenario benchmarks |
| | 2. How should benchmark scenarios be selected? | 1.5°C scenario that complies with criteria set out by the NZBA<br>Sector specific granularity<br>Update scenarios when refreshed by scenario provider |
| | 3. Should absolute emissions, production capacity, or emissions intensity units be used? | Absolute emissions and emissions intensity metrics for oil and gas<br>Emissions intensity metrics for power and utilities |
| Step 2: Assessing counterparty-level alignment | 4. What scope of emissions should be included? | Scope 1-3 emissions for oil and gas<br>Scope 1-2 emissions for power and utilities |
| | 5. How should emissions baselines be quantified? | PCAF approach and data prioritisation<br>Transparency of data sources and calculation methodologies |
| | 6. How should forward-looking emissions be estimated? | Historical data, published scenarios and emissions reduction targets used in projections |
| | 7. How should alignment be measured? | Assessed cumulatively for oil and gas<br>Assessed against point-in-time for power and utilities |
| Step 3: Assessing portfolio-level alignment | 8. How should alignment be expressed as a metric? | % absolute emissions reduction by 2030 from a 2019 baseline<br>Emissions intensity at 2030 |
| | 9. How should counterparty-level emissions be aggregated? | Portfolio weighted-average<br>Disclosure of proportion of portfolio covered by analysis |

Figure 1 - Model flow



# Step 1. Translating scenario-based carbon budgets into benchmarks

## What type of benchmark have we built?

We are using the Net Zero Emissions by 2050 ('NZE')[2] scenario provided by the International Energy Agency ('IEA') as a single-scenario reference benchmark to assess our financed emissions. It provides us with industry specific emissions projections from which we construct benchmark pathways. This benchmark helps us set targets that align the provision and facilitation of finance with the goals and timelines of the Paris Agreement at a portfolio level globally.

The NZE scenario projects energy-related and industrial process carbon dioxide (CO2) emissions to 2030 in line with a 1.5°C warming outcome with no or low temperature overshoot[2,3].

We chose emissions as the primary marker of transition progress. Alternative, production-based benchmarks only exist for a small number of sectors, and we believe the use of emissions data permits transparent disclosures and year on year tracking, facilitating impactful client engagement.

In acknowledgement of current projection modelling constraints, we plan to work with the IEA or other scenario modellers to create more granular regional pathways which capture material differences in decarbonisation that might affect our portfolio.

## How is our benchmark scenario selected?

The IEA NZE scenario that we selected builds on previous IEA scenarios which have been used extensively for target setting and portfolio alignment. Choosing this scenario allows us to make comparisons of our portfolio targets with other banks and peers who use this same scenario.

The scenario meets the requirements of our NZBA commitment to align our financing with outcomes consistent with a 1.5°C temperature rise.

In choosing the NZE scenario, we can model both absolute and emissions intensity activity figures (see Figure 2 and Figure 3). These can be used to construct intensity pathways for most of the sectors which we are targeting, allowing us to reflect differing rates of decarbonisation. For certain sectors, further details may be necessary for which we will incorporate additional references[4].

Following guidance from the SBTI and NZBA, our scenario has low reliance on negative emissions technologies, has "no-overshoot" or "low-overshoot" of 1.5°C, and we believe has reasonable assumptions on carbon sequestration achieved through nature-based solutions and land use change. Key assumptions underpinning the NZE scenario are publically available[5]. Furthermore, we have focused on a scenario that is peer-reviewed and uses a global energy model to generate sector-by-sector projections.

[2] International Energy Agency (2021), Net Zero by 2050, IEA, Paris

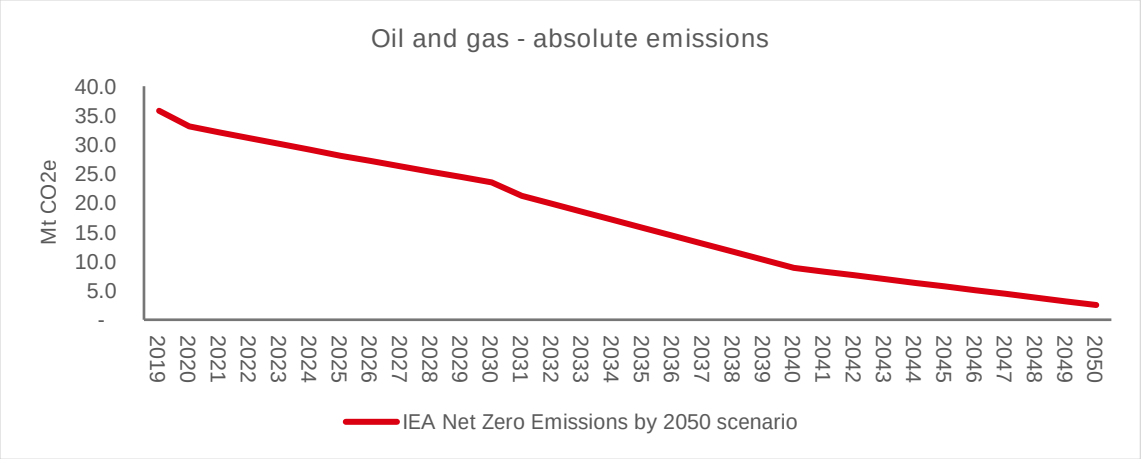
[3] IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty, In Press.

[4] For example, the IEA NZE scenario does not currently provide detail on decarbonisation pathways for agriculture and aluminium

[5] International Energy Agency (2021), World Energy Model, IEA, Paris

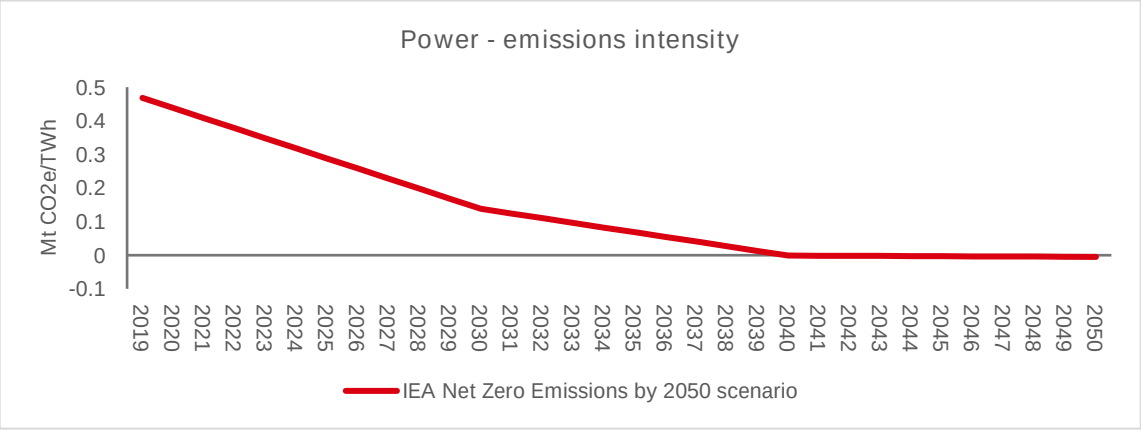
The IEA NZE scenario details more than 400 sectoral and technology milestones to help guide the global journey to net zero by 2050. However, we remain mindful that the NZE scenario does not yet include regional disaggregation, requiring us to make assumptions at a regional level within our portfolio. We plan to consult with external scientific and international bodies to inform these assumptions and will continue to monitor the available climate science and industry practice for portfolio alignment as it evolves. Further details on the NZE scenario are available at www.iea.org/reports/world-energy-model/net-zero-emissions-by-2050-scenario-nze.

Figure 2 - IEA Net Zero Emissions by 2050 reference scenario - oil and gas sector




Source: International Energy Agency (2021), *Net Zero by 2050,* IEA, Paris: Net Zero by 2050 Scenario - Data product - IEA. License: Creative Commons Attribution CC BY-NC-SA 3.0 IGO

Figure 3 - IEA Net Zero Emissions by 2050 reference scenario - power and utilities sector




Source: International Energy Agency (2021), *Net Zero by 2050,* IEA, Paris: Net Zero by 2050 Scenario - Data product - IEA. License: Creative Commons Attribution CC BY-NC-SA 3.0 IGO

## How do we decide if absolute emissions, production capacity, or emissions intensity units should be used?

Both absolute financed emissions and financed emissions intensities are employed during our analysis of the oil and gas, and power and utilities sectors. This is in line with NZBA and TCFD guidelines.

Absolute financed emissions, measured in Mt CO2e[6] for the oil and gas sector, are the attributed share of total GHGs emissions for a counterparty or portfolio. Physical emission intensity metrics describe the attributed quantity of

[6] Mt = Million tonnes, t = metric ton = tonne = 1000kg = 1000000g

emissions released per unit of production. The unit of production varies based on the sector and specific activity data. For oil and gas, we measure Mt CO2e/EJ. For power and utilities, we measure Mt CO2e/TWh[7].

Measuring absolute financed emissions in the oil and gas sector preserves a direct link to reducing GHG emissions in the real economy, and allows us to assess our alignment with the NZE scenario. However, baselining using solely absolute emissions for oil and gas as a metric may disincentivise the innovation in efficiency gains necessary for the net zero transition. Therefore, we also use emissions intensities to measure the transition of counterparties relative to the benchmark scenario and each other, irrespective of size or absolute emissions footprint.

For the power and utilities sector we use an emissions intensity metric. This helps to reflect the reality that over the next decade electrification of transport, heating and other activities are central to the decarbonisation of these systems, and will drive a corresponding increase in electricity demand. Over time, as clean energy sources make up more of the energy mix of the grid around the world, global GHG emissions will decouple from electricity demand. This will require rapid scaling up of investment and financing for renewable and other low emission sources of electricity to meet increased electrification. As such, the use of an emissions intensity metric for the power and utilities sector allows us to account for the anticipated increase in demand for electricity as electrification occurs, and the need to rapidly grow the proportion of renewable energy in electricity generation.

We also measure the economic emissions intensity – emissions released per invested amount (tCO2e/$bn) for on-balance sheet financed emissions.

[7] TWh = terawatt hour = 1000000000kWh

# Step 2. Assessing counterparty-level alignment

## What scope of emissions do we include?

In the energy sector, the value chain in scope for our analysis is shown in Figure 4.

Figure 4 - Value chain in scope

| Sector | Value chain in scope | | | | |
|---|---|---|---|---|---|
| Oil and gas | Upstream (e.g., extraction) | Midstream (e.g., transport) | Downstream (e.g., fuel use) | Integrated/ diversified | Included in analysis |
| Power and utilities | Upstream (e.g., generation) | Midstream (e.g., transmission and distribution) | | Downstream (e.g., retail) | |

The GHG accounting Scopes covered are Scope 1, 2 and 3 emissions[8] for the oil and gas sector, and Scope 1 and 2 emissions for the power and utilities sector. This is based on the parts of the sector that we believe are most material in terms of GHG emissions, and where engagement and climate action have the greatest potential to effect change.

For the oil and gas sector, we focused on upstream (e.g., exploration, extraction and drilling) companies, and integrated or diversified energy companies. Midstream (e.g., processing, storing and transportation of crude product) and downstream (e.g., refining and distribution) companies are excluded from our scope. By focusing on upstream and diversified energy producers, and including Scope 3 GHG emissions we believe we are accounting for the majority of emissions across the sector[9, 10, 11, 12].This includes emissions associated with the use of oil and gas products as a fuel source. We have excluded midstream and downstream companies within the oil and gas sectors in order to limit double counting within the sector level analysis and to concentrate engagement with customers whose products contribute most to GHG emissions in the global economy.

For the power and utilities sector, our analysis focused on upstream (e.g., power generation) companies. Midstream (e.g., transmission and distribution) and downstream (e.g., retail) companies are excluded from our scope. We believe power generation is where the majority of sector emissions occur through their use of fossil fuels (oil, gas and coal) as a source of energy[2]. For power generation companies, these are Scope 1 GHG emissions. In analysing the power and utilities sector, we did not take account of upstream Scope 3 GHG emissions because we believe them to be less material. We believe upstream power producers have the most potential to reduce GHG emissions by shifting to renewables and other sources of low-emissions power generation[12].

[8] World Resources Institute (2015), The GHG Protocol - A Corporate Accounting and Reporting Standard, USA
[9] International Energy Agency (2018), CO2 Emissions from Fuel Combustion 2018, IEA, Paris.
[10] International Energy Agency (2018), World Energy Outlook 2018, IEA, Paris
[11] McKinsey & company (2020), https://www.mckinsey.com/industries/oil-and-gas/our-insights/the-future-is-now-how-oil-and-gas-companies-can-decarbonize
[12] PACTA (2020), PACTA for Banks Methodology Document, Version 1.1.0

### Asset class definition

Our analysis covers financing from the global businesses of Global Banking and Markets ('GBM'), and Commercial Banking ('CMB').

We calculate on-balance sheet financed emissions using the apportioned value of on-balance sheet financing related to wholesale credit and lending, which includes business loans, trade and receivables finance, and project finance. Internal analysis of all on-balance sheet lending products was used to determine which should be qualified for inclusion and which should be excluded. We only include facilities with an original duration of 12 months or longer, including revolving loans, having considered industry guidance[13,14]. Product types that were excluded are overdrafts, limited recourse receivables finance, and trade finance products (import, export, bills). Corporate activities which are not lending products, such as savings and checking accounts, are also excluded.

We calculate facilitated emissions using the apportioned value of underwriting of debt and equity issuances, and syndicated loans. We refer to these collectively as capital markets activities, and the scope is determined based on HSBC's role in the transactions. We limit the calculation to attributable funds loaned or underwritten in which HSBC is a bookrunner.

We note that the PCAF Standard[14] does not yet define an attribution factor for capital market activities. We plan to stay abreast of industry developments and intend to adapt our approach as standardised methodologies are made available. To this end, we are collaborating with industry through a PCAF consultation[15]. Our calculation of facilitated emissions is based on the transaction flow over the reporting period (annual transaction volume).

### Sectoral classification

The scope of clients analysed is determined based on sectoral filtering and includes the codes shown in Table 2. For the wholesale lending portfolio, we use NACE[16] codes. NACE codes are assigned at the individual counterparty level, and we then determine the counterparty group level NACE code by assessing lending limits provided by HSBC to each individual counterparty within the counterparty group. The NACE code that applies to the individual counterparty with the largest total lending limit is then assigned to the counterparty group as a whole.

In circumstances where the largest total lending limit is associated with a financial or holding company NACE code, but the primary economic activity of that counterparty group is in the oil and gas, or power and utilities sector, we would still include the counterparty group in our analysis. As data availability improves, we plan to strengthen our analysis of counterparty groups by providing greater granularity, focusing our analysis at the individual counterparty level.

For the capital markets portfolio, NAICS[17] industry classifications are used in line with available vendor data.

[13] Science-Based Targets (2020), Financial Sector Science-Based Targets Guidance Pilot Version.
[14] PCAF (2020). The Global GHG Accounting and Reporting Standard for the Financial Industry. First edition.
[15] Capital Market Instruments Discussion Paper 2021, https://carbonaccountingfinancials.com/files/consultation-2021/pcaf-capital-market-instruments-paper.pdf
[16] NACE (Nomenclature of Economic Activities) is the European statistical classification of economic activities.
[17] NAICS (North American Industry Classification System) is the standard used by Federal statistical agencies in classifying business establishments for the purpose of collecting, analysing, and publishing statistical data related to the U.S. business economy.

## Table 2 - Sector classification

| Sector | NACE codes and definitions used for wholesale lending and project finance portfolio | NAICS classifications used for capital markets portfolio |
|---|---|---|
| Oil and gas | 61 - Extraction of crude petroleum | Oil and gas extraction |
| | 62 - Extraction of natural gas | |
| | 352 - Manufacture of gas; distribution of gaseous fuels through mains | |
| Power and utilities | 351 - Electric power generation , transmission and distribution | Electric power generation |

### GHG coverage

Regarding the different types of GHG measured, we include CO2 and methane (CH4), measured in CO2e, for the oil and gas sectors, and CO2 only for the power and utilities sector due to data availability and emissions materiality.

CO2 exists for a long time in the atmosphere and accounts for more than two-thirds of warming[18]. Most of the other GHGs have shorter lives and cannot be treated with a carbon budget approach in the same way. CH4 is a significant share of Scope 1 and 2 emissions in oil and gas, mainly due to gas flaring, and so it is within scope. Conversely, power and utilities sector emissions are recorded mostly as CO2, through the combustion of fossil fuels.

Methane and CO2 emissions are aggregated to tonnes of CO2 equivalent (CO2e) using the Global Warming Potential ('GWP') framework detailed by the GHG Protocol[19]. Whilst measuring methane emissions separately would be preferable, in the intermediate term we have included methane emissions with other gases, following PCAF guidance.

We do not include avoided emissions in our calculations. These are emission reductions that a financed project produces versus what would have been emitted in the absence of the project (the baseline emissions).

We performed baselining analysis using 2019 data, having taken into consideration potential distortions caused by the Covid-19 pandemic in 2020.

## How is our emissions baseline quantified?

### On-balance sheet financed emissions

On-balance sheet financed emissions for wholesale credit lending including business loans, trade and receivables finance, are calculated at a counterparty-level based on PCAF guidance. The PCAF Standard quantifies emissions which are being produced by a counterparty, and attributes a proportion of these emissions to the institution responsible for financing them. The general calculation, shown below, uses counterparty emissions and an attribution factor to assign emissions to our financing activities.

$$On\text{-}balance\ sheet\ financed\ emissions\ = attribution\ factor\ \times\ counterparty\ emissions$$

On-balance sheet financed emissions for project finance are calculated at a project-level based on PCAF guidance. The calculation is similar in concept to wholesale credit lending including business loans, and trade and receivables finance, except that the components are project-specific. Where we determine that data is unreliable, we revert to the approach for wholesale credit lending referred to above.

$$On\text{-}balance\ sheet\ financed\ emissions\ = attribution\ factor\ \times\ project\ emissions$$

[18] WRI (2021), https://www.wri.org/insights/4-charts-explain-greenhouse-gas-emissions-countries-and-sectors
[19] GHG Protocol (2020), Global Warming Potential Values, https://ghgprotocol.org/sites/default/files/ghgp/Global-Warming-Potential-Values%20%28Feb%2016%202016%29_1.pdf

### Facilitated emissions

Facilitated emissions are calculated and reported separately to on-balance sheet financed emissions.

Capital markets underwriting "facilitates" access to financing, but underwriters do not provide financing directly. Our calculation of facilitated emissions is based on the flow (annual transaction volume) rather than a stock (outstanding amount). The facilitated emissions calculation is very similar to the on-balance sheet financed emissions calculation but uses the "apportioned amount" of each transaction (the value of the financing facilitated by HSBC).

$$Facilitated\ emissions = attribution\ factor \times counterparty\ emissions$$

### Attribution factor

We account for a portion of the annual emissions of the financed counterparty by determining the ratio between our outstanding amount of counterparty finance (numerator) and the economic value of the financed counterparty (denominator). This ratio is called the attribution factor.

$$Attribution\ factor = \sum \frac{outstanding\ amount}{economic\ value}$$

The outstanding amounts for on-balance sheet financed emissions are represented by the drawn amount of funds provided to counterparties based on the end of year balance sheet (31 December 2021). We believe this better reflects current financing and funds currently contributing to activity in the real economy. It aligns with the PCAF Standard which recommends using the value of debt owed by a counterparty, defined as the disbursed amount minus any repayments.

Economic value is represented using three different measures in a hierarchical approach:

- Tier 1 – Enterprise value including cash ('EVIC')

EVIC is used for listed counterparties] where data is available. It is calculated as the enterprise value plus cash and cash equivalents. Depending on the data source, it can be calculated in two ways:

$$EVIC = enterprise\ value + cash$$

OR

$$EVIC = market\ capitalisation + book\ value\ of\ debt$$

- Tier 2 - Total debt and equity

When market values are not available, the total book values of debt and equity are used to calculate enterprise value, based on year-end reported financials:

$$Debt + equity = short\ term\ debt + long\ term\ debt + total\ equity\ or\ net\ worth$$

- Tier 3 - Total assets

When neither EVIC data nor the total book values of debt and equity are available, we follow PCAF guidance which stipulates that financial institutions are allowed to fall back on the total balance sheet value (total assets) as a proxy for company value.

We perform a number of checks to validate data underpinning our financed emissions calculation, including working with our business functions and strategy teams to review inputs.

### Portfolio-level emissions intensities

Our financed emissions intensities are calculated by aggregating financed emissions for each sector per unit of physical data (e.g., Mt CO2e/EJ, Mt CO2e/TWh).

$$Emissions\ intensity = \frac{on\text{-}balance\ sheet\ financed\ or\ facilitated\ emissions}{\sum total\ attributed\ activity}$$

## Counterparty emissions

Not all companies in our oil and gas, and power and utilities portfolio report emissions publicly. Our current oil and gas, and power and utilities portfolio reflects our financing as of the end of 2019, and of these exposures only approximately 1/3 of clients by exposure report Scope 1 and 2 emissions data. In addition, Scope 3 emissions data is only available for approximately 10% of our oil and gas portfolio. This means that we need to use proxies to estimate emissions when reported emissions data is unavailable.

When calculating counterparty emissions, we adopt the PCAF data quality hierarchy to help provide transparency in our calculation methodologies. Proxies are based on reported emissions, physical activity-based emissions, or economic activity-based emissions (see Table 3), and data is prioritised according to source and robustness.

For example, when data quality scores of two proxy calculations are similar, proxies are selected based on:

- Availability - Are there any data gaps?
- Transparency - What types of data sources were identified and investigated? Is the data publicly available?
- Accuracy - What are the assumptions made? How accurate are the results?
- Simplicity - How simple is this to input into the model? Is it easily replicable across clients?
- Relevance - How relevant is the calculation for different types of clients?

Table 3 - Emissions data hierarchy for proxy calculations

| PCAF data quality score (score 1 = highest quality; score 5 = lowest quality) | Proxy type | Calculation | Data required | Description |
|---|---|---|---|---|
| 1 | N/A | N/A | Counterparty reported emissions data (verified) | |
| 2 | Estimate of physical intensity | Primary physical activity of counterparty's energy consumption * emissions factors specific to primary data | Outstanding amount provided to the counterparty<br>Total counterparty equity plus debt<br>Energy consumption<br>Emissions factors specific to primary data | Emissions are calculated using primary physical activity data for the counterparty's energy consumption or production and emissions factors specific to that primary data. |
| 3 | | Primary physical activity of counterparty's production consumption * emissions factors specific to primary data | Outstanding amount provided to the counterparty<br>Total counterparty equity plus debt<br>Counterparty production data | |
| 4 | Estimate of revenue intensity | Counterparty revenue * emissions factors for the sector | Outstanding amount provided to the counterparty<br>Total counterparty equity plus debt<br>Counterparty revenue or financial proxy for counterparty revenue | Sector-based emissions factors. Average taken using revenue intensity factors for all counterparties where data is available. |
| 5 | Estimate of asset intensity | Outstanding amount in the counterparty * emissions factors for the sector | Outstanding amount provided to the counterparty | Sector-based emissions factors.<br>Average taken using asset intensity factors for all counterparties where data is available. |

Oil and gas Scope 3 emissions

The majority of our clients do not yet report the full scope of greenhouse gas emissions included in our analysis, in particular Scope 3 oil and gas emissions. To determine our Scope 3 oil and gas emissions, we apply two methodologies. The first proxy methodology is applied when production data is available, and the other when it is not.

When we do have production data, we calculate Scope 3 emissions in the following ways which yield a PCAF data quality score of 3:

- If production data is available, and we have emissions factors that are reported from vendors as Scope 1, 2 and 3 combined, we multiply production by an average share Scope 3 emissions factor to determine the total Scope 3 emissions.
- If production data is available but we don't have any reported emissions factors from third-party data vendors, we calculate emissions using publicly available emissions factors.

When we do not have production data from external sources, Scope 3 emissions are calculated by applying a scaling factor to known Scope 1 and 2 emissions. This yields a PCAF data quality score of 5.

Our PCAF data quality score exposure, corresponding to each proxy type, is shown in Table 4 and Table 5.

## Table 4 - PCAF Oil and gas data quality score exposure

| PCAF data quality score | On-balance sheet financed emissions | | | | Facilitated emissions | | | |
|---|---|---|---|---|---|---|---|---|
| | Scope 1 and 2 | | Scope 3 | | Scope 1 and 2 | | Scope 3 | |
| | Absolute emissions[1] | % exposure | Absolute emissions[1] | % exposure | Absolute emissions[1] | % exposure | Absolute emissions[1] | % exposure |
| 1 | - | - | - | - | - | - | - | - |
| 2 | 1.5 | 38.4% | 5.1 | 20.6% | 2.4 | 78.4% | 6.7 | 27.8% |
| 3 | 4.0 | 42.5% | 21 | 49.0% | 1.1 | 10.9% | 16.9 | 61.5% |
| 4 | 0.13 | 7.2% | - | - | 0.01 | 0.4% | - | - |
| 5 | 0.37 | 11.9% | 3.8 | 30.4% | 0.43 | 10.3% | 1.9 | 10.7% |

1 Absolute financed emissions are measured by million tonnes of carbon dioxide equivalent ('Mt CO2e').

## Table 5 - PCAF Power and utilities data quality score exposure

| PCAF data quality score | On-balance sheet financed emissions | | Facilitated emissions | |
|---|---|---|---|---|
| | Scope 1 and 2 | | Scope 1 and 2 | |
| | Absolute emissions[1] | % exposure | Absolute emissions[1] | % exposure |
| 1 | - | - | - | - |
| 2 | 3.0 | 35.2% | 2.4 | 43.1% |
| 3 | 6.5 | 39.3% | 1.0 | 9.0% |
| 4 | 0.13 | 10.8% | 0.002 | 2.1% |
| 5 | 0.43 | 14.7% | 1.0 | 45.8% |

1 Absolute financed emissions are measured by million tonnes of carbon dioxide equivalent ('Mt CO2e').

As data availability improves and sustainability disclosures become mandatory, our PCAF data quality score should also improve. We will continue to work with credible external providers and our customers to encourage and source client self-reported emissions.

### Data sources

The primary assumption within the model is that the data used is accurate and that methodologies used to remediate data gaps are appropriate. We enrich internal data with external data from vendors.

Table 6 provides the sources of the data needed to calculate our portfolio emissions.

Table 6 - Data sources

| Data type | HSBC systems | External data vendor | IEA | BEIS and DEFRA |
|---|---|---|---|---|
| Scope 1 emissions | | ■ | | |
| Scope 2 emissions | | ■ | | |
| Scope 3 emissions | | ■ | | |
| Oil production | | ■ | | |
| Gas production | | ■ | | |
| Oil-equivalent production | | ■ | | |
| Gas-equivalent production | | ■ | | |
| Power production | | ■ | | |
| Drawn balance | ■ | | | |
| Revenue | ■ | ■ | | |
| Total debt | ■ | ■ | | |
| Total equity | ■ | ■ | | |
| Total assets | ■ | ■ | | |
| EVIC | | ■ | | |
| Asset level data | | ■ | | |
| Capital markets data | ■ | ■ | | |
| Project finance data | ■ | | | |
| Proxy data | | | ■ | ■ |
| Scenario data | | | ■ | |
| Client target data | | ■ | | |

Vendors provide both reported emissions quantities as well as estimated emissions quantities, however most of our clients do not yet report their emissions. Vendors source data directly from stock exchanges, company registries, and other sources.

For several of the data points used to calculate Scope 1 and 2 emissions, multiple data sources are available. We use a waterfall analysis to establish a hierarchy for these external data sources, whereby data sources are assessed and ranked. The data sources are ranked based on:

- Data availability: Preference is given to sources with a higher level of coverage across the portfolio; and

- Margin of error across sources: At a counterparty level, emissions are compared across data sources to assess the variance in data. Spot checks are conducted to identify the most valid data points where possible by comparing the emissions to source data (often from annual reports) for a sample of counterparties where large differences exist.

Asset level data provides us with asset-level information for each counterparty, including production data for each asset per year and an emissions intensity number for each asset.

Financial data includes information present in a counterparty's financial statements or based on a counterparty's market value. This data is used for both estimating counterparty emissions, and for attributing emissions to HSBC. Key attributes are revenue or annual sales, total debt, total equity and total assets. Revenue represents the amount of money made through the sale of products in a year, based on the annual income statement. We use these as part of the proxy methodology for estimating emissions. Total debt outstanding represents the amount a counterparty has borrowed, based on the end of year balance sheet. Total debt, along with total equity and total assets, is used in the denominator of the attribution factor where EVIC is unavailable.

Although we seek to minimise the use of non-counterparty specific data, we apply industry averages in our analysis where counterparty-specific data is unavailable. For example, a lack of standardisation for emissions intensity proxy calculations based upon conversion factors means that we have used certain UK based emission conversion factors at a global level. We will seek to adopt a more regional approach, as datasets become available.

The methodology and data used to assess financed emissions and set targets is new and evolving, and we expect industry guidance, market practice, and regulations to continue to change. We plan to refine our analysis using the data sources and methodologies available for the sectors we analyse. We expect our data quality scores to improve over time as clients continue to expand their disclosures to meet growing regulatory and stakeholder expectations.

Our initial set of baselines and targets may require updating as data availability changes over time and methodology and climate science evolves. We plan to report financed emissions and progress against our targets annually and seek to be transparent in our disclosures about the methodologies applied. However, financed emissions figures may not be reconcilable or comparable year-on-year and targets may require re-evaluation.

## How are forward-looking emissions estimated? (momentum pathway)

Forward looking projections of client transition pathways are required to deliver the insights needed for portfolio alignment, capital allocation and risk management. A momentum pathway is developed for each sector portfolio to inform internal decision-making.

This pathway is constructed using the IEA Stated Policy Scenario ('STEPS'), a client's emissions targets, where available from external data vendors, and industry averages, to project absolute emissions and emissions intensities to 2030 at a portfolio level. The STEPS scenario assumes the global economy decarbonises at a rate determined by existing policies only. The scenario acts as a conservative reference for estimated forward-looking decarbonisation of individual counterparties based on current corporate, state and supranational commitments.

We integrate clients' emissions targets with our historical data and the STEPS scenario as follows (see Table 7):

1. Where clients have set targets, counterparty level emissions data from an external vendor are used to forecast the future predicted change in emissions shown in Table 7.
2. For holdings in clients where they have not set emission reduction targets, we use the STEPS rate of change for emissions and production to calculate emissions intensities using IEA data[20].

[20] IEA (2021), Global Energy Review: CO2 Emissions in 2020, IEA, Paris

## Table 7 – Client target selection criteria

| | |
|---|---|
| Target set before 2030 | We assume a pathway to that date based on the set target, and a pathway to 2030 based on the annual rate of change for emissions in the STEPS Scenario. |
| Client targets set for 2030 | Use provided target |
| Client targets set for beyond 2030 | We use a straight-line interpolation to calculate a 2030 equivalent for the target |

At present we assume clients meet stated targets where they declare them. This assumption will need adjustment in future reporting years as forward-looking projections should not be based solely on stated targets.

Ideally, projections should incorporate multiple data sources to inform a credibility analysis of interim targets (where they exist) alongside the availability of necessary technology and policy levers. We are working on enhancing our capabilities to gather granular data to more effectively assess client transition plans and momentum in-line with available science.

### How is alignment measured?

For our on-balance sheet financed emissions, we have set targets for 2030 and plan to set further targets in five-year increments thereafter, in accordance with NZBA guidance.

- We assess oil and gas portfolio alignment by comparing the reduction of on-balance sheet financed emissions relative to the benchmark scenario's reduction to 2030 from a 2019 baseline.
- We assess power and utilities portfolio alignment by comparing on-balance sheet financed emissions intensity relative to the benchmark scenario at 2030.

For facilitated emissions, we have not set any targets as the industry guidance for calculating the emissions baseline is still being developed. We will monitor developments and intend to adapt our approach as progress is made in this field.

We plan to annually measure and report current financed emissions, and progress against our targets, in our annual report and accounts and related disclosures.

# Step 3. Assessing portfolio-level alignment

## How is alignment expressed as a metric?

In line with NZBA guidelines, we express alignment using the following forward-looking metrics:

- Oil and gas - Absolute on-balance sheet financed emissions percentage reduction by 2030 from a 2019 baseline.
- Power and utilities - Physical on-balance sheet financed emissions intensity at 2030.

Our 2030 targets are based on IEA Net Zero Emissions by 2050 scenario references. For oil and gas, the IEA indicates in its scenario a reduction of 34% in global sector Scope 1, 2 and 3 emissions (Mt CO2e) to 2030 from a 2019 baseline. For power and utilities, the IEA indicates a global sector Scope 1 and 2 emissions intensity at 2030 of 0.14 Mt CO2e/TWh electricity produced.

We set an absolute reduction target for oil and gas to avoid rewarding clients who might achieve emissions intensity reductions without reducing output, had we chosen to set an intensity target. Moreover, we believe it promotes diversification and recognises that upstream oil emissions cannot be decarbonised below a certain amount, at a given level of output.

We chose an emissions intensity metric, rather than absolute emissions for the power and utilities portfolio to reflect the need to reduce global GHG emissions from power generation whilst also meeting growing electricity demand due to increased electrification.

## How are counterparty-level emissions aggregated?

Our analysis is performed at the counterparty group level. As data availability improves, we may adapt our approach to more granular individual counterparty-level analysis.

Counterparty group scores are aggregated at a sector level. We can also aggregate geographically to provide more information about how the portfolio is performing within a region.

When calculating the portfolio-level emissions intensities, we aggregate counterparty financed emissions and production values using a portfolio-weighted approach.

$$Emissions\ intensity\ = \sum_{c} Attribution\ factor\ \times \frac{GHG\ emissions_c}{Production_c}$$

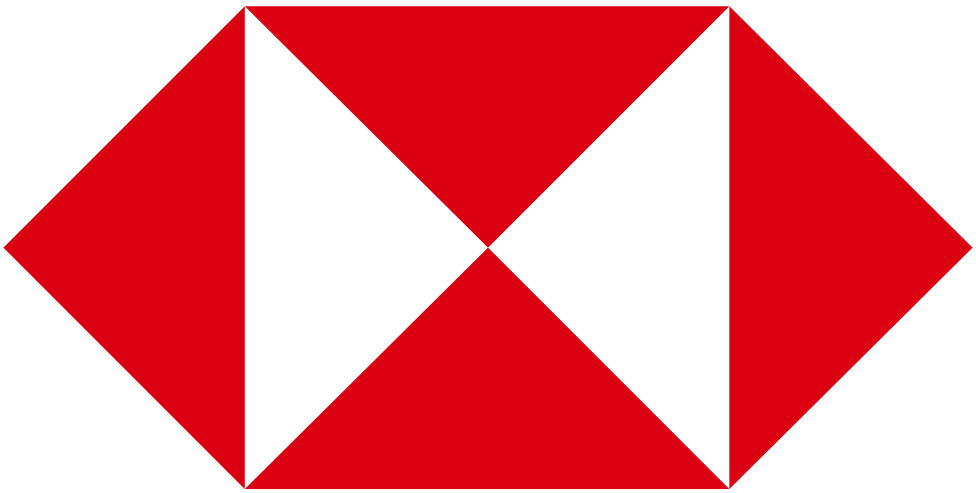
# Model governance

The model we have developed to calculate our financed emissions baseline is subject to a governance process that includes input from model users and peer review from external consultants and senior stakeholders across our businesses and functions. Subject matter experts from GBM and CMB reviewed and challenged model design choices and assumptions through a series of workshops. Model development and outputs are governed by the Climate Aligned Finance ('CAF') Programme Steering Committee. This meeting is made up of senior representatives across global lines of business (GBM and CMB) and business functions (Corporate Sustainability, Global Finance, Global Risk and Compliance, Data Architecture Office, Legal, Investor Relations). Subject matter experts and external consultants are also invited where appropriate. The CAF Steering Committee is overseen by the Climate Business Council which reports to the Group Executive Committee and the Group ESG Data Forum on climate-related topics.

# Cautionary statement

This document contains both historical and forward-looking statements. All statements other than statements of historical fact are, or may be deemed to be, forward-looking statements. Forward-looking statements may be identified by the use of terms such as 'may,' 'intends,' 'aims,' 'ambition,' 'plan,' 'target,' 'will,' 'should,' 'potential,' 'reasonably possible' or 'anticipates' or the negative thereof or similar expressions, or by discussions of strategy. These forward-looking statements include statements relating to becoming a net zero bank and targets and methodologies for measuring financed emissions.

Achieving these aims is inherently uncertain and is subject to a number of risks and uncertainties, including the efficacy of government, customer, and HSBC's actions in managing and mitigating climate change; societal shifts in customer financing and investment needs; delays to the pace of change; development and use of new technology; ability to exploit growth or investment opportunities; changes in public expectations and other changes to business conditions; adverse changes in regulatory capital and tax regimes; data quality and the availability and development of methodologies for measuring financed and facilitated emissions; and the other risks, uncertainties and assumptions about HSBC, as described under 'Cautionary statement regarding forward-looking statements' and 'Risk factors' contained in the HSBC Holdings plc Annual Report on Form 20-F for the year ended 31 December 2020, filed with the SEC on 24 February 2021 (the '2020 Form 20-F'), in other reports on Form 6-K furnished to or filed with the SEC subsequent to the 2020 Form 20-F ('Subsequent Form 6-Ks') and in our Annual Report and Accounts for the fiscal year ended 31 December 2021 available at www.hsbc.com and which we expect to file with the SEC on Form 20-F on 23 February 2022 (the "2021 Form 20-F"). HSBC Holdings plc undertakes no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. In light of these risks, uncertainties and assumptions, the forward-looking events discussed herein might not occur. Investors are cautioned not to place undue reliance on any forward-looking statements, which speak only as of their dates. Additional information, including information on factors which may affect the HSBC Group's business, is contained in the 2020 Form 20-F, Subsequent Form 6-Ks and the 2021 Form 20-F.



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