

Financed emissions methodology

for the lending portfolio

December 2023

About this document

In this document, we the Nordea Group provide an overview of the methodologies underpinning our disclosures of financed emissions in the lending portfolio in our annual report and Implementing Technical Standards (ITS) on Pillar III disclosures on ESG risks report. The document also describes the basis for financed emissions recalculations seeking to support and provide transparency for our climate targets. The methodology is aligned with regulatory requirements and our voluntary external commitments, such as the Partnership for Carbon Accounting Financials (PCAF).

This publication has been prepared for information purposes only. Further information on our work regarding climate change and sustainability is provided in our annual report. A separate “Climate target methodologies for the lending portfolio” document can be found at [Nordea.com](https://www.nordea.com).

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1 Introduction

Our objective is to become a net-zero emissions bank by 2050 at the latest. To reach this goal, we have set a mid-term target to reduce carbon emissions across our lending and investment portfolios by 40-50% by 2030¹. In addition, as a member of the Partnership for Carbon Accounting Financials (PCAF), we have committed to report our share of climate responsibility for the emissions associated with the loans we grant to our customers and with our investments, known as financed emissions.

As of 2023 we plan to report financed emissions in the lending portfolio² for the following asset classes: business loans and unlisted equity (including project finance and shipping), commercial real estate, residential real estate and motor vehicles.

In compliance with the PCAF guidelines known as The Global GHG Accounting and Reporting Standard for the financial industry and Finans Danmark's Framework for Financed Emissions Accounting (known as the Danish CO₂ model), we have developed an approach to estimate financed emissions in the lending portfolio.

We also describe the basis for the recalculation of the financed emissions baseline, our financed emissions accounting and our financed emissions targets based on the guidelines of the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard.

Methodological approaches for financed emissions in listed equities and corporate bonds under Nordea Asset Management and Nordea Life & Pension are not covered in this document. Information on the above can be found in our annual report.

1.1 Scope

This document covers the following asset classes in the lending portfolio:

- Business loans, where we include project finance and the Shipping sector³
- Residential real estate (RRE), referred to as Mortgages within the PCAF standard
- Commercial real estate (CRE)
- Motor vehicles

We acknowledge that financed emissions regulatory requirements are continuously developing and are committed to extending our reporting scope accordingly. Our aim is to include financed emissions from sovereign debt and emission removals in the near future and to improve the data quality across all our financed emissions.

1.2 Measurement of financed emissions

The methodology applies the same general attribution principles across the reported asset classes:

1. Financed emissions are calculated by multiplying an attribution factor (specific to that asset class) by the emissions of the borrower.
2. The attribution factor represents Nordea's share of the borrowers' emissions that is allocated based on the loan granted to the borrower. The attribution factor is calculated by determining the

¹ For further details on our targets, see "Climate target methodologies for the lending portfolio" at Nordea.com.

² The lending portfolio refers to the non-investment portfolio in the Nordea Banking Book, covering volumes from Lending to the Public and Lending to Financial Institutions.

³ Shipping vessels are not a directly defined asset class based on the PCAF standard. We are reporting this sector based on Finans Danmark's Framework for Financed Emissions Accounting.

share of the outstanding amount of loans of a financial institution over the total equity and debt of the company⁴, project, etc. to which the financial institution has lent money.

3. Emissions data is obtained applying the following methods: a) emissions verified and reported directly or indirectly by customers, b) estimated emissions based on primary data on physical activity and, c) estimated emissions based on economic activity.

$$\text{Financed emissions} = \sum_i \text{Attribution factor}_i \times \text{Emissions}_i$$

(with i = borrower)

↓

$$\frac{\text{Outstanding amount}_i}{\text{Total equity} + \text{debt}_i}$$

Figure 1. Financed emissions formula

We estimate customers' scope 1, 2 and 3 emissions. In terms of reporting and with the aim of avoiding double counting and ensuring transparency, our scope 1 and 2 financed emissions are reported separately from customers' scope 3 emissions (see the annual report).

1.3 Financed emissions data quality hierarchy

The quality and availability of emissions data vary between asset classes and are generally better for portfolios with a high concentration of listed corporate entities. We rely on the PCAF methodology to score the emissions data depending on the source and quality of the information. The score ranges from 1 to 5, with 1 being the score for the most accurate emissions data (audited GHG emissions data or actual primary energy data) and 5 being the score for the uncertain data (estimated data with very limited support).

Data quality hierarchy according to PCAF

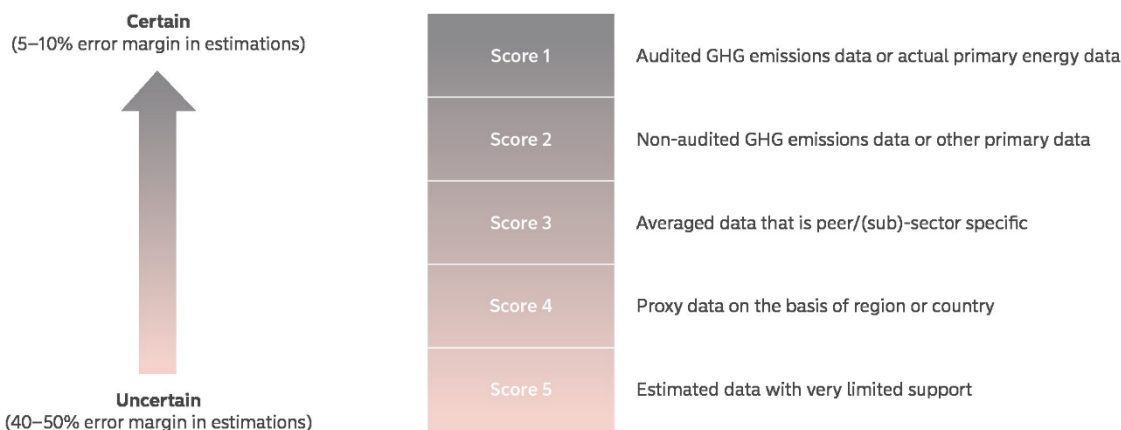


Figure 2. Financed emissions data quality hierarchy

⁴ The total equity and debt are used for business loans. For motor vehicles, residential real estate and commercial real estate, the attribution factor is calculated using the asset value (i.e., vehicle value and property value).

1.4 Governance

The financed emissions methodology for the lending portfolio has been approved for publication by the Nordea Group Sustainability and Ethics Committee. The methodology is used to guide the financed emissions reporting in our annual report and ITS on Pillar III disclosures on ESG risks report.

The methodology will be continually updated and reviewed in accordance with the characteristics of our lending portfolio and progress in data quality enhancement. The methodology is approved on an annual basis by our management committee and controlled through the quarterly risk appetite monitoring carried out by our second line of defence.

2 Asset classes calculation methodology

2.1 Business loans

Scope

Business loans are defined as our on-balance sheet loans or lines of credit for general corporate purposes to businesses, non-profits and any other organisation⁵ not traded on the market. For loans with a potentially variable outstanding amount, only those outstanding on the year-end balance sheet are included. In the current methodology, we have chosen to classify project finance as business loans and to estimate its emissions using the business loans approach. Equity investments for general corporate purposes to businesses, non-profits, and any other organisation not traded on the market are also treated as business loans.

Financed emissions are calculated based on the general formula (see Figure 1. Financed emissions formula).

Attribution factor

The attribution factor is calculated using the book value to obtain the enterprise value including cash (EVIC). The attribution factor for business loans should not exceed 100%.

Estimated emissions

The main data quality challenge for this asset class is the limited availability of reported customer-specific emissions data, which is biased towards the largest corporate customers. Consequently, financed emissions estimates for most business loans are based on the country- and industry-specific proxy emission factors from 2015 provided by the PCAF.

For emissions in the Power Production sector, we have introduced a green production proxy for fully renewable energy producers that do not report emissions. Based on information from the Intergovernmental Panel on Climate Change (IPCC) and United Nations Economic Commission for Europe (UNECE) we can estimate that those customers can generate 5gCO₂/kWh, which is multiplied by the company's power production, thus improving the data quality from 5 to 3.

For Oil & Gas Exploration and production companies without reported scope 3 emissions, we have used internal estimates based on applicable combustion-related emission factors from regional peers and production data and assessed this as data quality score 3. The above applies to financed emissions in 2019 and 2022. For 2023, all customers in this segment reported scope 3 emissions, which means that no estimates were used.

⁵ This includes e.g., governmental owned enterprises.

2.1.1 Shipping

Scope

The PCAF standard does not provide guidelines for Shipping. Therefore, we calculate the emissions based on the Danish CO₂ model guidelines. Shipping includes exposures that are secured by vessel collateral.

Attribution factor

Financed emissions are calculated using the oldest market value available (i.e., from 2019), which is maintained as the reference point for future estimations. The attribution factor is multiplied by the emissions of each vessel to obtain the financed emissions.

Estimated emissions

For shipping vessels that are eligible under the Poseidon Principles, emissions data is based on the fuel consumption which is assessed as PCAF data quality score 1. For exposures linked to Poseidon unmatched shipping vessels, and exposures linked to offshore vessels, we have applied our own dynamic shipping proxy (i.e., updated annually) that has been built using emissions per nautical mile from the actual vessel fleet that the bank finances. With this, we consider the customers' operating costs, so financed emissions are based on the actual operation activity of the customers/vessels.

2.2 Commercial real estate and residential real estate

Scope

Commercial real estate (CRE) is real estate where loans have been taken by Real Estate Management Industry (REMI) customers and secured by commercial or residential real estate collateral. Residential real estate (RRE) is secured by residential real estate collateral and the loan is taken by a natural person. The RRE covers most financed emissions from tenant-owner associations (TOAs)⁶ as they are mainly used for residential purposes.

Financed emissions for CRE and RRE are calculated as the sum of the building emissions multiplied by the attribution factor, across each building in the portfolio.

Attribution factor

The attribution factor is the ratio of the outstanding amount of the loan and the property value at origination. For properties with no value at origination, we use the oldest available property value. The method for calculating the attribution factor is the same for both RRE and CRE loans.

Furthermore, we have developed our own attribution approach for TOAs, as there is no PCAF standard currently available. The majority of these are included under RRE, as the purpose is normally residential rather than income-generating. Our approach for TOAs is to minimise undercounting financed emissions at the risk of double counting emissions. Emissions are calculated separately for lending to the TOA and lending against the apartments. We are looking forward to aligning our TOA approach with a more standardised methodology together with our peers in the Nordics.

⁶ A TOA consists of a housing association made up of a number of members or shareholders who have bought the right to occupy an apartment within a shared building. The association will have a loan with the bank for the purchase or construction of the building, while individual members of the association will independently have loans for the purchase of their "shares", with the apartment (or share) as collateral.

Estimated emissions

The emissions for CRE and RRE are calculated using Energy Performance Certificates (EPCs) as available. Most of the financed emissions for both asset classes are calculated based on floor area or building level approximation, using specific emission factors according to country and property type sourced from the PCAF European Building Emission Factor database from 2018. Additionally, we treat EPCs that expired up to five years ago as valid and give them a data quality score of 4.

Within CRE, we have applied an internal proxy to financed emissions data quality score 5, allowing us to close the information gap on physical emission intensity. Our proxy consists of using the floor area from properties with data quality scores 3 and 4 to estimate the floor area of similar properties within data quality score 5. This estimated floor area is then used in combination with the floor-area based PCAF proxy to calculate the financed emissions for data quality score 5, which makes it possible to report the physical emission intensity for the total CRE portfolio.

2.3 Motor vehicles

Scope

Motor vehicles include lending and leasing secured by motor vehicles. While the PCAF standard only provides guidance for motor vehicles lending, we have decided to include leasing by calculating it and treating it in the same way as lending. The decision to include leasing is due to the customers always gaining possession of the vehicle after the short lease period. There are no additional inclusions or exclusions, except a separation of boats for recreational use (included) from those used for commercial transport (excluded, as they fall under the Shipping sector within business loans).

The financed emissions from motor vehicles are calculated by multiplying the attribution factor by the emissions of the motor vehicle.

Attribution factor

The attribution factor is obtained by dividing the outstanding amount by the total value at origination. In all cases, the calculated attribution factors are capped at 100%.

Estimated emissions

For passenger cars and vans, the emissions are sourced from external data providers based on the vehicle's model (data quality score 2). These motor vehicles also use the average annual driving distance based on national statistical data. For the rest of the vehicles, we use estimates of emissions sourced from the PCAF database, which provides annual emissions per vehicle type, representing the weighted average national emissions considering the distribution of petrol, diesel, hybrid and electric in the region, as well as the average distance travelled (data quality score 4).

3 Methodology deviation and extension

Due to specific considerations regarding our corporate lending portfolios, we have applied some deviations from the PCAF standard:

| Nordea lending portfolio | Deviations from PCAF | Extensions from PCAF and own approaches |
|--------------------------|---|--|
| Business loans | <ul style="list-style-type: none"> Project finance exposures are embedded in business loans and not treated separately Use of the book value instead of the market value for calculating EVIC to mitigate the effect of market volatility in the financed emissions attribution | <ul style="list-style-type: none"> Use of an own proxy for fully renewable energy producers within Power Production Shipping is included within business loans and the financed emissions are calculated based on the Danish CO₂ model Use of an own proxy for Poseidon unmatched shipping vessels and offshore vessels Use of an own proxy for Oil & Gas Exploration and production companies without reported scope 3 emissions |
| CRE | <ul style="list-style-type: none"> Use of indexed value instead of market value applied at point of loan origination for all exposures | <ul style="list-style-type: none"> Developed an own emission accounting methodology for TOAs to address double counting of properties Use of EPCs that expired up to 5 years ago as valid, assigned a data quality score of 4 Use of an own proxy for financed emissions within data quality score 5 |
| RRE | <ul style="list-style-type: none"> Use of indexed value instead of market value applied at point of loan origination for all exposures | <ul style="list-style-type: none"> Developed an own emissions accounting methodology for TOAs to address double counting of properties Use of EPCs that expired up to 5 years ago as valid, assigned a data quality score of 4 |
| Motor vehicles | - | <ul style="list-style-type: none"> Applicability of PCAF financed emissions rationale (formula) to motor vehicles leasing |

Table 1. Nordea's deviations and extensions from the PCAF standard and own approaches

4 Emissions intensities

Our financed emissions disclosures in the annual report include a further breakdown of emission intensities, in particular for our sector-specific targets. This enhances the transparency of our targets and

improves comparability across peers in the industries in question. Our absolute financed emissions are translated into physical or economic intensities depending on the case, using the formulas specified in the PCAF standard⁷.

| Metric | Formula |
|-----------------------------|--|
| Economic emission intensity | $\text{Economic emission intensity} = \frac{\text{Absolute financed emissions}}{\text{Loan volume (EUR)}}$ <p>E.g., in Agriculture we express it as tCO₂e/EURm</p> |
| Physical emission intensity | $\text{Physical emission intensity} = \frac{\text{Absolute financed emissions}}{\text{Financed physical activity or output}}$ <p>E.g., in Power Production we express it as gCO₂e/kWh</p> |

Table 2. Formulas for emission intensities

5 Baseline recalculation for financed emissions

In line with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard requirement, we have defined financed emissions recalculation guidelines at two levels. The first level states the circumstances under which base year emissions must be recalculated and the significant threshold (>5%) that triggers a recalculation of total financed emissions. These circumstances are i) significant structural changes (i.e., acquisitions and divestitures), ii) significant impacts due to changes in GHG emission estimation models, and iii) significant improvements or errors in the data. The second level is for changes in the base year emissions of sector-specific targets affecting the actuals and either the absolute financed emissions or the physical emission intensities within that sector. The significant threshold is >5% within the sector-specific target.

To accurately track progress towards our emission intensity targets and to ensure the highest possible quality of information and transparency over time, our base year financed emissions starting point (i.e., 2019) must be adjusted in the event of the significant changes mentioned above. We may also choose to recalculate our base year emissions for changes deemed less significant to ensure the consistency, comparability and relevance of the reported emissions data over time.

6 Differences compared with Pillar III reporting

The expectations of Pillar III disclosures on ESG risks are aligned with the guidelines under the PCAF Standard. The approach for disclosing financed emissions as per the annual report and Pillar III disclosures on ESG risks report follow the same methodology.

Financed emissions in the annual report are targeted towards a wider group of stakeholders. In contrast, the presentation of the information in Pillar III is given based on the regulatory requirements in “Template 1. Banking book – Indicators of potential climate change transition risk⁸”, where the aim is to disclose gross carrying amounts towards non-financial corporates and the corresponding financed emissions by NACE sector.

⁷The exception is for shipping in Poseidon, as the physical emission intensity is calculated using the Annual Efficiency Ratio (AER) metric, where carbon intensity is a quotient of fuel consumption by distance travelled times dead weight tonnage (dwt). More information can be found in the Climate target methodologies for our lending portfolio at Nordea.com.

⁸ [Commission Implementing Regulation \(EU\) 2022/2453](#) of 30 November 2022 amending the implementing technical standards laid down in Implementing Regulation (EU) 2021/637 as regards the disclosure of environmental, social and governance risks

7 Limitations

Our methodology for financed emissions depends on updates from external data sources and new guidelines from PCAF. We must internally assess such changes to understand their potential impact on financed emissions and define our approach to them.

Data quality and availability vary between asset classes and are better for listed corporate entities. The absence of actual customer data is compensated by using proxies. This helps us provide an estimation of financed emissions but at the same time the estimations are associated with a higher level of uncertainty. In addition, emission factors based on old proxies represent a challenge since they do not reflect the recent emission trends, especially in the Nordic context. Emission factor databases across countries and regions can significantly impact the financed emissions, which can increase reporting inconsistencies. This necessitates a deep analysis and understanding of what the best options are to use for estimating financed emissions in the most accurate way.

Double counting in financed emissions is a common challenge in financed emissions accounting and is in many cases unavoidable. To mitigate this risk and following the recommendations set out in the PCAF standard, we report counterparties' scope 1 and 2 emissions separately from their scope 3 emissions.

Due to delays between the availability of customer emissions information and our external reporting, we must report with a data access delay, meaning that our financed emissions for 2023 will be based on customers' financial data from that same year, but on emissions from 2022 or earlier data, depending on the latest available information.

8 Disclaimer

This document has been prepared by Nordea Group. It is provided for informational purposes only and should not be considered investment, legal or tax advice. In addition to the limitations previously described, our methodology can be affected or modified by (among other reasons): (i) improvements and adoption of new internal approaches, (ii) updates in external guidelines on financed emissions (e.g. the PCAF standard), and (iii) changes in the regulatory environment and other government actions. In all cases, we seek to comply with all regulatory requirements, our voluntary commitments, and stakeholders' expectations. This document does not imply that Nordea has undertaken to revise these statements beyond what is required by applicable law or applicable stock exchange regulations if and when circumstances arise that lead to changes following their publication.