



# Greenhouse Gas Emissions of NWB Bank's Loan Portfolio

The GHG footprint of 2024

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# Management summary

The Paris Climate Agreement, signed in 2015, set the goal of limiting global warming to less than two degrees Celsius above pre-industrial levels. The aim is to keep warming limited to one and a half degrees. Subsequently, the Netherlands set a specific target in the 2019 National Dutch Climate Agreement: to reduce greenhouse gas (GHG) emissions by 55% by 2030, compared to 1990 levels. The Netherlands aims to be carbon neutral by 2050.<sup>1</sup> Much remains to be done to make the transition to a low-carbon society. While many organisations are taking action, many others are still lagging behind.

Since the 2015 Paris Climate Conference, the banking sector has been actively engaged in helping to realise the ambitions of the Paris Agreement. Given the scale of the climate challenge and the crucial role of the banking industry and the financial sector in general in facilitating the transition to net zero carbon emissions, the Partnership for Carbon Accounting Financials (PCAF) was established.

NWB Bank committed itself to PCAF in 2019. Using the PCAF methodology, the GHG emissions of the bank's loan portfolio have been calculated and disclosed in the NWB's annual report from 2019 onwards.<sup>2</sup> The loan portfolio consists of the social housing sector, water authorities, healthcare institutions, drinking water utilities and a few other sectors.

In this report the overview tables contain the results for the years 2018, 2023 and 2024. The reference year for the NWB Bank is 2018, which will always be recalculated in case of changes to the methodology, whenever possible. In addition, each year the GHG emissions of the most recent and one year before will be (re)calculated. The results for the year 2024 are the most recent. The results are therefore one year behind. Calculating and presenting GHG emissions over a period allows the bank to monitor the evolution of the GHG emissions over time.

This report describes the methodology and results of the GHG emissions assessment of NWB Bank's loan portfolio for the year 2024. The climate impact has been (re)calculated in accordance with the latest available harmonised approach

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<sup>1</sup> Rijksoverheid (n.d.). [Klimaatverandering beperken](#) (Dutch website).

<sup>2</sup> NWB Bank (n.d.). [Annual reports](#).

for the financial sector in the Netherlands<sup>3</sup> and the global GHG accounting & reporting standard.<sup>4</sup>

This report provides information on financed GHG emissions (scope 1) and indirect GHG emissions (scope 2 and, where available, scope 3). The calculations are based on available data such as energy consumption, travel behaviour and purchased materials. Emission factors from CO2emissiefactoren.nl were used to calculate the GHG emissions in most cases. The share of the outstanding loan in the total balance sheet of the client has been used to attribute the clients' GHG emissions to NWB bank, resulting in the financed GHG emissions for NWB Bank loans. These financed GHG emissions are reported in this report.

Table S-1 shows that the total loan volume has increased over the years, and Table S-2 shows that the total loan volume with a calculated GHG footprint has increased as well (from 55,902 million euros in 2023 to 58,868 million euros in 2024).

Compared to 2023 the coverage ratio has increased. As shown in Table S-1, 98.4% of the NWB Bank's loan portfolio is covered in this GHG emissions report. Although the coverage ratio for 2024 is 98.4%, not all sectors in Table S-1 include scope 1, 2 and 3 emissions. Where scope 3 emissions are included, they are not always complete, for example, in sectors such as healthcare.

Table S-2 shows that for 98.4% of the loan portfolio, the total financed GHG emissions are 1,496,151 tCO<sub>2</sub>e, the relative financed GHG emissions are 25.4 tCO<sub>2</sub>e per million euro and the overall PCAF-data quality score is 2.5 on a scale of 1 (best) to 5 (poor).

Coinciding with the increased covered loan volume, the financed GHG emissions increased by almost 51 kt CO<sub>2</sub>e between 2023 and 2024. Financed GHG emissions are not directly comparable over time as the coverage ratio increased from 93.4% to 98.4% between 2018 and 2024. Relative financed GHG emissions provide more information. These relative emissions show whether GHG emissions per million euro increase, decrease or remain the same as the coverage ratio increases. Relative financed GHG emissions decreased by 0.5 tCO<sub>2</sub>e per million euro between 2023 and 2024 and by 9.9 tCO<sub>2</sub>e per million euro between 2018 and 2024. Which is a reduction of 28.0%. The sectors drinking water utilities, NHG pass-through RMBS and 'other sectors' are excluded in this measure, as they were not part of the baseline 2018 calculation.

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<sup>3</sup> Accounting GHG emissions and taking action: harmonised approach for the financial sector in the Netherlands PCAF The Netherlands, report 2019

<sup>4</sup> PCAF (2022). [The Global GHG Accounting and Reporting Standard Part A: Financed Emissions](#). Second edition.

The increase of 51 ktCO<sub>2</sub>e (+3.5%) between 2023 and 2024 is due to an increase in GHG emissions of 63 ktCO<sub>2</sub>e in the sectors of social housing, water authorities and drinking water utilities. The GHG emissions increased by 10 ktCO<sub>2</sub>e for the sectors NHG pass-through RMBS, other sectors and renewable electricity. The increase in GHG emissions for the social housing sector is mainly due to higher scope 1 natural gas emissions. Between 2023 and 2024, households living in social housing seem to have used heating more frequently, following several years of cautious gas use. Average temperatures remained similar to the previous year, suggesting this change was driven by occupant behaviour rather than weather conditions. In the renewable energy sector, an increase has been observed not only in the number of clients within the sector financed by NWB, but also in emissions associated with the production, installation, maintenance, and decommissioning of wind and solar parks. This applies to both absolute and relative emissions. New clients added since 2023 account for 45% of the total absolute GHG emissions.

For the drinking water utilities sector, a mixed picture emerges: some clients report zero scope 2 emissions, while others have experienced an increase in scope 2 emissions. The attribution factor has also increased, due to increases in both the loan portfolio. Therefore, more GHG emissions have been attributed to the NWB. For the water authorities, emissions from sewage treatment plants have increased compared to 2023, representing the main reason for the growth in absolute GHG emissions.

The largest reductions in absolute GHG emissions were seen in the educational institutions and municipalities. For both sectors, the largest reduction was seen in scope 1 (natural gas use). For the healthcare sector, it was not possible to compare the results over time, as the methodology has changed compared to last year.

Per million euro, the “other sectors” and water authorities have the highest relative financed GHG emissions in 2024. Since 2018, the water authorities have shown the largest decrease in these relative GHG emissions. A small share of clients in the “other sectors” group has a large GHG footprint. The high emissions in the “other sectors” group are largely attributable to the nature of the activities carried out by a small share of clients, which result in a substantial GHG footprint. Further research should identify opportune mitigation efforts.

NWB Bank aims to significantly reduce its carbon footprint by 2030. The relative financed GHG emissions for the key sectors of water authorities, drinking water utilities, social housing associations, municipalities and healthcare institutions are to be reduced by 43% compared to the 2018 reference year (2020 reference year for drinking water utilities). Although relative financed emissions for each sector have decreased over the full period, 2023-2024 saw a significant increase for some.

Although a direct comparison between years at the level of the total loan portfolio is not fully possible due to differences in coverage ratios, the data suggest a decrease in NWB Bank's loan portfolio GHG emissions, expressed in tCO<sub>2</sub>e per million euros. It should be noted, however, that over 2023–2024 the reduction trend has shown signs of slowing, and in some cases, there is even a slight relative increase. This is largely due to the growth of the loan portfolio but also reflects minor increases in certain areas. NWB Bank remains committed to accelerating the reduction of its portfolio's GHG emissions in the coming years. Targets have been set to reduce GHG emissions in the water authorities, drinking water utilities, social housing, municipalities and healthcare sectors. NWB Bank will support this by encouraging its clients to reduce GHG emissions, including through offering loans linked to sustainable development. In addition, NWB Bank aims to improve the completeness of the GHG footprint of its loan portfolio each year, ensuring that actions taken in the field are reflected in the footprint.

External factors will always have an impact on GHG emissions. In the last five years, events such as the global pandemic and the conflicts in the world have affected energy prices, energy consumption and travel patterns. Changes in weather conditions, especially in winter, can have an impact on GHG emissions, as colder temperatures often lead to increased heating demand and higher energy consumption. The energy consumption of social housing associations, municipalities, healthcare, and education institutions has been adjusted for weather conditions. In other sectors, however, the figures are not corrected. For instance, rainfall affects the energy use of water authorities, as wetter conditions increase the amount of water that must be treated and pumped, leading to higher energy demand. Long term monitoring of the GHG footprint of the bank's loan portfolio will show whether the reduction is temporary (e.g. due to external factors) or whether it is a long-term positive development due to structural changes in behaviour or investments in sustainable energy sources and/or investments in more sustainable real estate.

Table S-1 Total outstanding loans of NWB and part covered in the GHG assessment for the years 2018, 2023 and 2024.

Market segment	Sector	Nace code	Total loan portfolio (million euro)			Coverage ratio by GHG footprint of total loan portfolio (%)		
			2018*	2023 <sup>^</sup>	2024	2018	2023	2024
Social Housing	Social housing associations	6820	30,265	32,591	34,522	97.1	99.7	99.8
Public sector	Municipalities	8410	6,583	5,901	5,764	100.0	100.0	100.0
	Provinces	8410	247	340	317	100.0	100.0	100.0
	Water authorities	8410	6,327	8,370	8,945	100.0	100.0	100.0
	Others	-	16	20	20	-	-	-
Healthcare	Healthcare	8600	2,119	1,925	1,985	89.4	99.3	99.4
Education	Educational institutions	8500	73	79	70	97.1	100.0	100.0
Network & utilities	Drinking water utilities <sup>#</sup>	3600	477	1,214	1,445	-	97.5	98.9
Renewable Energy	Renewable electricity	3500	12	994	1,045	-	88.6	89.0
Financial counterparties	Credit institutions & other financial institutions	6400	116	316	302	-	-	-
	NHG pass-through RMBS	6400	-	2,638	2,864	-	91.8	92.0
Other	Other sectors <sup>**</sup>	-	1,409	2,502	2,577	-	92.8	91.9
<b>Total</b>	<b>All sectors</b>	<b>-</b>	<b>47,644</b>	<b>56,892</b>	<b>59,855</b>	<b>93.4</b>	<b>98.3</b>	<b>98.4</b>

- means no data are available.

\* The total loan portfolio of 2018 is without NHS pass-through RMBS.

<sup>^</sup> The current report does not include data for 2019, 2020, 2021 and 2022. It is decided to calculate 3 years: The reference year (2018) and the two most recent years, 2023 and 2024.

<sup>#</sup>For drinking water utilities, the reference year is not 2018, but 2020. Sector specific data are presented in chapter 9.

<sup>\*\*</sup>Other sectors include credit institutions, other financial institutions, nonfinancial corporates, other public organisations and joint regulations.

Reference date for the year 2024 is 31-12-2024, reference date for the year 2023 is 31-12-2023, and reference date for the year 2018 is 31-12-2018.

Table S-2 Absolute and relative financed GHG emissions for the years 2018, 2023 and 2024.

Market segment	Sector	Nace codes	Loans of clients for which a GHG footprint was calculated (million euro)			Financed GHG emissions (tCO2e)			Relative financed GHG emissions (tCO2e/million euro)			Data quality *
			2018	2023 <sup>^</sup>	2024	2018	2023	2024	2018	2023	2024	2024
Housing	Social housing associations*	6820	29,383	32,490	34,438	486,014	318,850	352,202	16.5	9.8	10.2	2.0
Public sector	Municipalities*	8410	6,583	5,901	5,764	212,131	184,898	180,905	32.2	31.3	31.4	3.8
	Provinces	8410	247	340	317	17,483	8,813	10,057	70.9	25.9	31.8	4.0
	Water authorities	8410	6,327	8,370	8,945	762,026	511,903	528,127	120.4	61.2	59.0	2.8
Healthcare	Healthcare*	8600	1,895	1,912	1,973	92,963	62,519	43,212	49.1	32.7	21.9	2.6
Education	Educational institutions	8500	70	79	70	325	1,073	1,056	4.6	13.6	15.1	3.0
Networks & Utilities	Drinking water utilities	3600	-	1,185	1,430	-	34,928	48,223	-	29.5	33.7	2.3
Renewable Energy	Renewable electricity	3500	-	881	931	-	15,160	17,357	-	17.2	18.7	3.0
Financial counter-parties	NHG pass-through RMBS	6400	-	2,422	2,633	-	51,618	54,182	-	21.3	20.6	3.0
Other	Other sectors <sup>#</sup>	-	-	2,323	2,368	-	255,360	260,830	-	109.9	110.2	4.5
<b>Total</b>	<b>All Sectors</b>	-	<b>44,505</b>	<b>55,902</b>	<b>58,868</b>	<b>1,570,942</b>	<b>1,445,124</b>	<b>1,496,151</b>	<b>35.3</b>	<b>25.9</b>	<b>25.4</b>	<b>2.5</b>

- means no data are available.

<sup>^</sup> In current report, data of the years 2019, 2020, 2021 and 2022 are not included. It is decided to calculate 3 years: the reference year (2018) and the two most recent years, 2023 and 2024 current report.

\* Weighted average data quality score. More details about the data quality score can be found in the sections Data Quality Estimate of every sector.

<sup>#</sup> Other sectors include credit institutions, other financial institutions, non-financial corporates, other public organisations and joint regulations.

Table S-3 Changes in financed GHG emissions over the years

Market segment	Sector	Nace code	Difference in financed GHG emissions (tCO <sub>2</sub> e)			Difference in financed GHG emissions (%)		
			2018-2023	2018-2024	2023-2024	2018-2023	2018-2024	2023-2024
Social Housing	Social housing associations	6820	-167,163	-133,811	33,352	-34.4	-27.5	10.5
Public sector	Municipalities	8410	-27,232	-31,225	-3,993	-12.8	-14.7	-2.2
	Provinces	8410	-8,670	-7,426	1,244	-49.6	-42.5	14.1
	Water authorities	8410	-250,123	-233,899	16,224	-32.8	-30.7	3.2
	Others	-	-	-	-	-	-	-
Healthcare	Healthcare <sup>^</sup>	8600	-30,444	-49,752	-19,308	-32.7	-53.5	-30.9
Education	Educational institutions	8500	747	730	-17	229.8	224.5	-1.6
Network & utilities	Drinking water utilities <sup>#</sup>	3600	-	-	13,295	-	-	38.1
Renewable Energy	Renewable electricity	3500	-	-	2,197	-	-	14.5
Financial counterparties	Credit institutions & other financial institutions	6400	-	-	-	-	-	-
	NHG pass-through RMBS	6400	-	-	2,563	-	-	5.0
Other	Other sectors <sup>**</sup>	-	-	-	5,470	-	-	2.1
<b>Total</b>	<b>All sectors</b>	<b>-</b>	<b>-482,885</b>	<b>-455,383</b>	<b>51,028</b>	<b>-30.7</b>	<b>-29.0</b>	<b>3.5</b>

- means no data are available.

<sup>^</sup> Direct comparisons over time are not possible for the healthcare calculations due to a change in methodology. More details about the change in methodology can be found in the healthcare chapter, chapter 8.

<sup>#</sup> For drinking water utilities, the reference year is not 2018, but 2020. Sector specific data are presented in chapter 9.

<sup>\*\*</sup> Other sectors include credit institutions, other financial institutions, nonfinancial corporates, other public organisations and joint regulations.

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# 1 Introduction

The Paris Climate Agreement, signed in 2015, set the goal of limiting global warming to less than two degrees Celsius above pre-industrial levels. The aim is to limit warming to one and a half degrees. Subsequently, the Netherlands set a specific target in the 2019 National Dutch Climate Agreement: to reduce greenhouse gas (GHG) emissions by 55% by 2030, compared to 1990 levels. The Netherlands aims to be carbon neutral in 2050.<sup>5</sup>

Achieving these targets requires a fundamental transition to a new energy system. An increasing share of electricity is already being generated from renewable sources such as wind and solar, complemented by geothermal energy, hydrogen and biogas. However, the transition to renewable energy alone is not sufficient. Improving energy efficiency and reducing overall energy consumption are equally important pillars of climate policy, as also emphasised in the Paris Climate Agreement. Energy savings contribute directly to lowering emissions, reducing pressure on natural resources and limiting environmental impacts associated with the production of renewable technologies, such as wind turbines, solar panels and batteries, which often rely on scarce materials and resource-intensive processes.

At the same time, electricity demand is expected to rise in the near future due to the electrification of transport, the shift of industry away from fossil fuels, and the transition of buildings to district heating or electric heating systems. This makes energy efficiency even more critical. Although many organisations are actively working towards these goals, substantial efforts are still required to complete the transition to a low-carbon society, as a significant number of actors continue to lag behind.

Since the 2015 Paris Climate Conference, the Dutch financial sector has been involved in contributing to the realisation of the ambitions of the Paris Agreement. Banks play a crucial role in realising these ambitions. This is not only because they represent most of the world's available capital, but also because the largest banks have still invested almost \$4.6 trillion in the fossil fuel sector since the Paris Climate Agreement in 2015. This is equivalent to \$1.8 billion every day since the end of 2015, with no downward trend or assessment of the carbon impact of this funding.<sup>6</sup>

In 2019, 54 financial institutions signed the Climate Commitment. These banks, insurers, pension funds and asset managers agreed on how they will actively contribute to the Paris Climate Agreement and the Dutch Climate Agreement as the

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<sup>5</sup> Rijksoverheid (n.d.). [Klimaatverandering beperken](#) (Dutch website).

<sup>6</sup> PCAF (n.d.) [About PCAF](#).

financial sector.<sup>7</sup> The participating institutions agreed to take four actions: to participate in financing the energy transition, to measure the GHG emissions of their relevant financing and investments, to prepare action plans including GHG emission reduction targets and to organise consultations with relevant stakeholders on the progress of the GHG emission reductions.

## 1.1 A Partnership for Carbon Accounting Financials: PCAF

PCAF is a global partnership of financial institutions that work together to develop and implement a harmonised approach to assessing and disclosing the GHG emissions associated with their loans and investments.<sup>8</sup> In 2015, the Dutch Carbon Pledge started with eleven institutions under the leadership of ASN Bank. These financial institutions wanted to take responsibility and take new and meaningful steps to help keep global warming below safe levels. Since then, more financial institutions have joined forces under PCAF to develop and implement open-source methodologies to measure the GHG emissions of all asset classes within their loan and investment portfolios.<sup>9</sup>

NWB Bank committed to PCAF in 2019. In 2019, NWB Bank asked Telos<sup>10</sup> to measure the GHG emissions related to the bank's loan portfolio, using the PCAF methodology. The first GHG emissions report was for the year 2018. Since then, the financed GHG emissions have been reported annually and published in the NWB Bank's annual report.<sup>11</sup> Each year, NWB reports on the reference year (2018) as well as the two most recent consecutive years.

Finding ways to improve the methodology, for example by changing the calculation methodology or using higher quality data sources, is an ongoing process. The reasons and justifications for these changes are discussed in detail in this report.

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<sup>7</sup> Klimaatakkoord (2019). [Commitment van de financiële sector](#) (Dutch article).

<sup>8</sup> PCAF (n.d.) [About PCAF](#).

<sup>9</sup> Ibid.

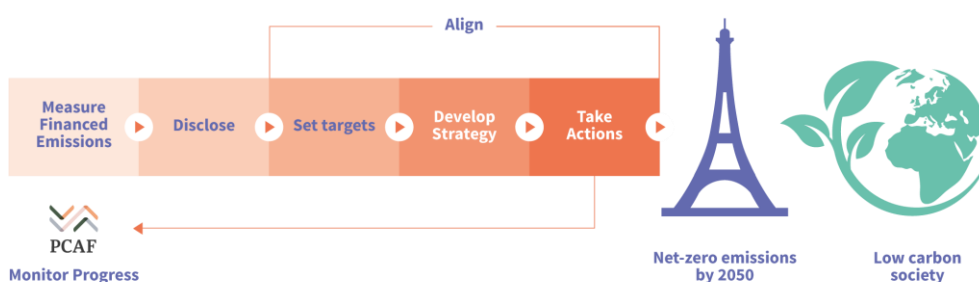
<sup>10</sup> At that time Telos was an independent research institute, based at Tilburg University. In January 2020 Het PON and Telos have merged into one organisation called Het PON & Telos. At the same moment this new institute, Het PON & Telos, became official partner of Tilburg University.

<sup>11</sup> NWB Bank (n.d.). [Annual reports](#).

## 1.2 From GHG footprint to action

Measuring and disclosing the GHG emissions associated with the financial institutions' lending and investment activities is necessary for transparency and accountability. But PCAF is not only about measuring and disclosing the GHG emissions of a financial institution's portfolio. It is also about identifying and setting targets for reducing the carbon footprint and taking action (Figure 1).

Figure 1. Visualisation from GHG footprint to action



Monitoring the climate impact of its lending is an important step for NWB Bank in setting objectives to contribute to the Paris climate targets. Based on this knowledge, the bank also wants to have a positive impact on the (sustainability) activities of its clients. In 2022, NWB Bank presented her climate action plan<sup>12</sup> which was expanded in their 2024 ESG transition plan.<sup>13</sup> This plan describes how NWB Bank will contribute to the reduction of GHG emissions to meet the targets of the Paris agreement. The aim is that the NWB Bank's loan portfolio generates net zero GHG emissions by 2050. NWB Bank aims to significantly reduce its carbon footprint by 2030. The relative emissions (per outstanding balance) for the key sectors of water authorities, drinking water utilities, social housing associations, municipalities and healthcare institutions are to be reduced by 43% compared to the 2018 reference year (2020 reference year for drinking water utilities).

Another way in which NWB Bank aims to contribute to the targets of the Paris agreement is by facilitating the energy transition of its clients within its loan portfolio. By 2035, NWB Bank aims to finance renewable energy production equivalent to the total fossil energy consumption of its loan portfolio. In this report, the fossil energy consumption of NWB Bank's loan portfolio is presented (chapter 14), to monitor the energy transition of the portfolio. Further details on the ambition, including the financing of renewable energy production, can be found in NWB Bank's annual reports.

<sup>12</sup> NWB Bank (n.d.). [NWB Bank publishes its climate action plan](#).

<sup>13</sup> NWB Bank (n.d.). [NWB Bank publiceert ESG-transitieplan](#) (Dutch website).

## 1.3 Reading guide

This report describes the methodology and results of the GHG emissions assessment of NWB Bank's loan portfolio.

Chapter 2 describes the PCAF methodology in general. In chapter 3, the loan portfolio of NWB Bank is presented. Chapter 4 up to 13 describe the results of the coverage ratio and the absolute and relative financed GHG emissions and a description of the methodology for the sectors that are part of NWB's loan portfolio. Chapter 14 summarises the results of all sectors.

The following sectors are included in this report:

- Social housing sector
- Public sector: Water authorities, Municipalities and Provinces
- Healthcare sector
- Drinking water utilities
- Educational institutions
- NHG pass-through RMBS (mortgages)
- Renewable electricity
- Other sectors

Compared to last year, the methodology has been further improved for the following sectors:

- Municipalities
- Educational institutions
- Healthcare sector

The details of the reasoning behind and the justification for the methodological improvements in the above-mentioned sectors are discussed in the individual chapters. If the financed GHG emissions are recalculated for 2018 and 2023, the files for those years are also included in the calculation sheets per chapter, but if only 2024 is calculated, only that year is included in the calculation sheets per chapter.

This report presents GHG emissions for 2018 (reference year), 2023 and 2024. In the management summary and in chapter 14, the loan portfolio, the coverage ratio and financed GHG emissions are presented for the years 2018, 2023 and 2024. This allows the Bank to monitor the development of GHG emissions over time. For each year, the reference date of the loan portfolio was the end of the year. GHG emissions were calculated using the most recent available data, which for 2024 are from either 2023 or 2024. Where data from 2023 are used, this is explained in the relevant chapter.

Please note that due to rounded values in tables, small differences between values mentioned in the text and values in the table can be expected.

## 2 PCAF methodology

The methodology used in the current study, is based on several reporting standards: *The Greenhouse Gas Protocol (A corporate accounting and reporting standard, revised edition)*<sup>14</sup>, *The harmonized approach for the financial sector in the Netherlands*<sup>15</sup> and *The global GHG accounting & reporting standard*.<sup>16</sup> The overall reporting requirements and recommendations are as follows:

- Principles: GHG accounting and reporting by financial institutions shall be based on the following principles: relevance, completeness, consistency, transparency, and accuracy.
- Purpose: A financial institution's reporting should be aligned with its specific business objectives; for instance, to identify and manage climate-related transition risks or to achieve a specific emissions reduction target.
- Frequency: Financial institutions shall disclose information at least annually and at a fixed point in time in line with the financial accounting cycle. They shall ensure that this point in time provides a representative view of emissions for the reporting year and transparently disclose any major changes close to (before or after) the reporting date that have affected the results.
- Recalculation and significance thresholds: In accordance with the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard, financial institutions shall establish a baseline recalculation policy to define under which circumstances a recalculating of (reference year) financed emissions is necessary to ensure the consistency, comparability, and relevance of the reported GHG emission data over time. As part of this reference year emissions recalculation policy, financial institutions shall establish and disclose the significance threshold that triggers reference year emissions recalculations.
- Form of reporting: Financial institutions shall disclose information in publicly available reports such as (semi) annual reports, website articles, or other publicly available sources as deemed appropriate by the financial institution.

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<sup>14</sup> GHG Protocol: A Corporate Accounting and Reporting Standard – Revised Edition (2004).

<sup>15</sup> PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second edition.

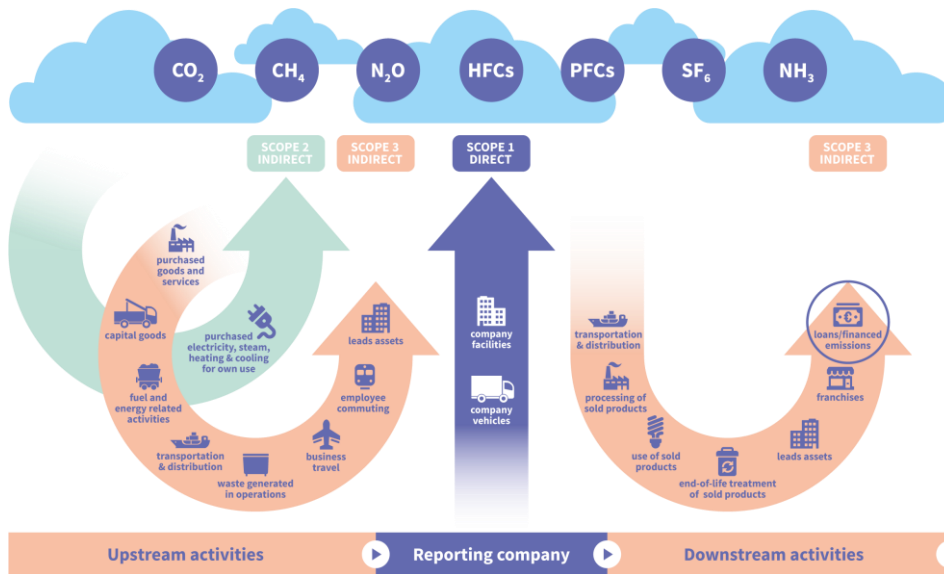
<sup>16</sup> Ibid.

- Past performance: Where appropriate and relevant to their business objectives, financial institutions should disclose their financed emissions for multiple comparable time periods, e.g., years.

## 2.1 Scopes

The GHG Protocol is the most widely used GHG accounting standard. The GHG Protocol defines three different scopes that all entities can report on separately (see Figure 2). As shown in Figure 2, GHG emissions include CO<sub>2</sub>, CH<sub>4</sub>, N<sub>2</sub>O, HFCs, PFCs, and SF<sub>6</sub>. In the current report these scopes are defined from the perspective of the reporting financial institution such as NWB and focus on all the direct and indirect GHG emissions for which NWB is responsible for financing different types of organisations. Emissions resulting from a reporting company's loans and investments fall under Scope 3 downstream emissions (see blue circle in Figure 2). In the PCAF methodology, scopes 1, 2 and 3 refer to the scope from the perspective of the investee, project, company or government.

Figure 2. The scope definitions from the GHG protocol (Image created from GHG protocol)



According to the *GHG Protocol Corporate Value Chain Accounting and Reporting Standard*, a financial institution's GHG footprint should include:

- Scope 1: All direct GHG emissions that occur from sources owned or controlled by the reporting company, such as natural gas use and fuel for company cars of the investee, project, company or government.
- Scope 2: Indirect emissions from the generation of purchased or acquired electricity, steam, heating, or cooling consumed by the investee, project, company or government. Scope 2 emissions physically occur at the facility where the electricity, steam, heat, or cooling is generated.
- Scope 3: All other indirect emissions (not included in Scope 2) that occur in the value chain of the investee, project, company or government. Scope 3 can be divided into upstream emissions that occur in the supply chain (for example, from production or extraction of purchased materials) and downstream emissions that occur because of the use of the organisation's products or services.

Disclosure of total generated emission data are mandatory for scopes 1 and 2. Disclosure of emission intensity data (tCO<sub>2</sub>e per million euro) for scopes 1 and 2 is voluntary. For scope 3 emissions, disclosure of total calculated data are mandatory if relevant and available (i.e., recommended by the methodology). Total generated emissions data refer to the aggregated emissions totals (in tCO<sub>2</sub>e) calculated by the institution through the application of the methodology, as opposed to the underlying reported or estimated input data. Disclosure of scope 3 emission intensity data (tCO<sub>2</sub>e per million euro) is voluntary. If this data are not provided, institutions should explain why they are unable to provide it. Table 2-1 shows the scope of the coverage per sector.

**Table 2-1 Scope of the coverage per sector**  
 - means no data are available for this scope.

Market segment	Sector	Scope 1	Scope 2	Scope 3
Social housing	Social housing associations	x	x	*
Public sector	Municipalities	x	x	x
	Provinces	x	x	x
	Water authorities	x	x	x
Healthcare	Healthcare	x	x	x
Education	Educational institutions	x	x	*
Network & Utilities	Drinking water utilities	x	x	x
Renewable energy	Renewable electricity	-	-	x
Financial counterparties	NHG pass-through RMBS	x	x	*

Others	Other sectors	x	x	x
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\*Scope 3 is not covered as no data were available to calculate the scope. With regard to social housing and NHG pass-through RMBS in particular, there is still some discussion about whether scope 3 should be included. This is not currently a requirement of the PCAF methodology. Scope 3 emissions are considered immaterial when spread over the full life cycle of a social dwelling. Therefore, in addition to the lack of data, scope 3 emissions of the social housing sector are not considered.

## Scope 2 and scope 3 location-based and market-based emissions

Scope 2 and some scope 3 emissions can be calculated in two ways: location-based and market-based. Location-based emissions refer to what the company physically consumes at its sites. It is based only on the average emission intensity of the local energy grid where the electricity comes from. It doesn't consider any sustainable energy purchase contracts the company might have. The way to reduce the emissions using the location-based method is to use less energy or to use more energy directly from your own solar panels, for example.

Unlike the location-based method, the calculation of market-based emissions focuses on the individual company and its contractual arrangements in the market. Market-based emissions are associated with the energy a company buys, which is different from the energy generated by the local grid.

The location-based method shows what the company physically puts into the air, while the market-based method shows the emissions the company is responsible for through its purchasing decisions.

In this report, the method that is used depends on the availability of data. For the social housing sector, municipalities, provinces, healthcare and education, the location-based emissions are calculated because for these sectors it is not known what type of energy contracts the clients have.

For water authorities and drinking water utilities, however, it is largely known what type of energy contracts the companies have. For these sectors, market-based emissions are calculated. According to the method recommended by CO2emissiefactoren.nl, a distinction is made in the calculation between sustainable energy sources from the Netherlands (emission for sustainable energy source used) and sustainable energy sources outside the Netherlands (grey electricity emission factor used).

## 2.2 Attribution

The calculated GHG footprint of NWB's loan portfolio issued to municipalities and public infrastructure was calculated using the attribution approach. The attributed GHG emissions are calculated by using the following formula:

$$\sum CO_2eq \times \frac{\textit{Outstanding loan volume}}{\textit{Total balance sheet (equity + debt)}}$$

The GHG emissions from all individual organisations are added together at sector level to calculate the total emissions in CO<sub>2</sub> equivalent per sector. Together, all sectors together account for the total CO<sub>2</sub> equivalent emissions of NWB's loan portfolio.

When interpreting the results in this report, it is important to note that due to the methodology used (especially for smaller sectors), changes in the ratio of outstanding loan volume to total balance sheet between years will affect the change in GHG emissions attributable to the bank (financed GHG emissions).

Therefore, an increase or decrease in the absolute GHG emissions between years may be the result of a change in the ratio of outstanding loan volume to total balance sheet rather than, for example, structural changes in energy consumption at sector level. The total balance sheet has an impact on both absolute and relative GHG emissions. If the ratio of outstanding loan volume to total balance sheet affects the financed GHG emissions this is indicated in the results section.

## 2.3 Data quality

An important element of carbon accounting is ensuring the quality of emission data attributed to loans and investments. Different asset classes present unique challenges and opportunities with respect to emission data. This section outlines some overarching principles regarding the quality and preferred hierarchy of emission data. High quality emission data are defined as follows:

- Emission data are consistent, both across entities and over time
- Emission data reflect the underlying emissions generating activities of the entity and are not influenced by unrelated factors
- Emission data are accompanied by a relevant level of assurance.

It is possible that emission data may not meet all the criteria listed above. This will depend on the specific characteristics of the loan or investment and the best practice in the sector or market. In order to comply with the PCAF reporting

guidelines, participating institutions are asked to publish the existing PCAF hierarchy in accordance with Table 2-2. This table provides guidance on the disclosure of data quality scores overall and per asset class. In addition, the PCAF (2022) report provides a more detailed table presented by asset class which can be used to determine the data quality by sector.<sup>17</sup> These asset class tables are used as a reference for this report.

The data quality presented in each chapter refers to the data quality of the most recent year (2024). In Table S-2 (Management summary) and Table 14-2 (Chapter 14) the data quality scores are presented to one decimal place and are calculated according to the percentage of emissions per sector per scope.

The average data score for each sector is generated in several ways:

1. If the same data quality score is given for each scope within the sector, this is also the average score. This is the case for sectors social housing associations, education institutions, NHG pass-through RMBS and renewable electricity.
2. Where different scopes within a sector have different data quality scores, the average data score is calculated by multiplying the data score for each scope by its percentage of GHG emissions per scope. This is the case sectors for municipalities, provinces, water authorities and drinking water utilities.
3. If, within a sector, a data quality score differs between clients, the data quality score per client is multiplied by the loan amount, then summed up and finally divided by the total loan amount within the sector, as indicated in Chapter 6 of the *Financed Emissions The Global GHG Accounting & Reporting Standard Part A*.<sup>18</sup> This applies to other sectors.
4. If, within a sector, a data quality score for a specific scope differs between clients, the data quality score per client is multiplied by the loan amount, then summed and finally divided by the total loan amount within the sector, as indicated in Chapter 6 of the *Financed Emissions The Global GHG Accounting & Reporting Standard Part A*.<sup>19</sup> Afterwards the average data score is calculated by multiplying the data score per scope by the percentage of GHG emissions per scope. This applies to healthcare institutions.

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<sup>17</sup> PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second edition.

<sup>18</sup> PCAF (2022). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Second edition.

<sup>19</sup> Ibid.

As the data source and calculation method may differ between scopes and between items within a scope, several data quality scores are given for different scopes within a sector. The general factsheets in the sector specific chapters provide a detailed explanation of the reasons behind the data quality scores.

Table 2-2 Generic data quality table

Data quality (highest to lowest)	Description
1	Audited GHG emission data or actual primary energy data
2	Non-audited GHG emission data, or other primary data
3	Averaged data that is peer/(sub)-sector-specific
4	Proxy data on the basis of region or country
5	Estimated data with very limited support

## 2.4 Emission factors

To calculate the GHG footprint of NWB’s loan portfolio, emission factors were applied to calculate the total GHG emissions associated with the financed activities. Choosing the right emission factors is crucial. For this publication, the emission factors from [CO2emissiefactoren.nl](http://CO2emissiefactoren.nl) have been used in most cases. This list of emission factors is developed by the Dutch government, SKAO, Stimular, Connekt, and Milieu Centraal.<sup>20</sup> This list is frequently updated and includes information on the system boundaries used, as well as providing a list of widely accepted and consistent emission factors.

PCAF has chosen to use the emission factors expressed in the ‘Tank to Wheel’ (TTW) column on [CO2emissiefactoren.nl](http://CO2emissiefactoren.nl). This emission factor only includes emissions from the use of the energy source and not the production of the energy source. Where the term emission factor is used, this refers to CO<sub>2</sub>-equivalents per unit.

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<sup>20</sup> In March 2014, the Green Deal CO<sub>2</sub> equivalent emission factors were signed by the Dutch national government, SKAO, Stimular, Connekt and Milieu Centraal. Due to an increase in attention for CO<sub>2</sub> emission factors, more tools are created to calculate a footprint. However, confusion arises when companies and organisations use different figures. Creating a uniform list is a solution to this and that is why the Green Deal CO<sub>2</sub> equivalent emission factors was developed. The aim of the Green Deal is to arrive at a single, widely supported and scientifically substantiated list of CO<sub>2</sub> emission factors, based on generally accepted principles. The list concerns CO<sub>2</sub> data of energy carriers, passenger transport, goods transport and refrigerants. The primary target group consists of companies and organisations that use CO<sub>2</sub> equivalent emission data or calculation tools in their communications or reports. This shifts the discussion about the accuracy of the figures to what really matters: reducing GHG emissions.

An emission factor may change over time. Factors may change due to changes in methodology based on scientific evidence or due to changes in the context of the emission factor (gradual changes over time). For example, the emission factor for electricity from an unknown source. This emission factor is calculated based on the national energy production mix (e.g. the ratio between coal, nuclear, and renewable energy sources). This factor changes every year due to changes in the national energy mix.

Changes in CO<sub>2</sub> emission factors can affect the development of GHG emissions. Therefore, when calculating GHG emissions, it may be necessary to recalculate the GHG footprint of previous years in order to make an accurate comparison between them. [CO2emissiefactoren.nl](https://co2emissiefactoren.nl) advises whether the revised emission factor should be used retroactively and specifies the effective date.

In this report, when emission data are presented longitudinally, the following three basic principles have been used to determine the emission factor:

1. Changes in emission factors over time due to changes in the national energy mix: use the emission factor corresponding to the year of the data. E.g. Use the 2024 emission factor for 2024 data.
2. Changes in emission factors over time due to technological development: use the emission factor corresponding to the year of the data. E.g. Use the 2024 emission factor for 2024 data.
3. Changes in emission factors over time due to new methodology or scientific evidence: use the most recent emission factor. E.g. Use the 2024 emission factor for 2023 data.

An overview of the emission factors used per year is provided in Appendix A. In general, emission factors have been chosen for each calculation and approach according to the data year.

An exception was made for district heating in the social housing sector. Two years ago, it was decided that the emission factor for 2022 would also be used for 2018 when calculating the GHG emissions for district heating.

Prior to 2022, the list of emission factors on [CO2emissiefactoren.nl](https://co2emissiefactoren.nl) only contained one emission factor for a combined heat and power plant (heat from a large or small gas-fired CHP plant). This had to be used when the heat source of the heat network was unknown. The emission factor for this was 32.53 kgCO<sub>2</sub>e per GJ. However, since 2022, the list of emission factors on [CO2emissiefactoren.nl](https://co2emissiefactoren.nl) includes an emission factor for average heat networks. This emission factor is 23.4 kgCO<sub>2</sub>e per GJ for 2022, which is much lower than the emission factor for before 2022. Because of this large difference and the lack of another emission factor for 2018, it was decided two years ago to apply the 2022 emission factor to 2018.

The sustainable performance of heating networks improves over time. Using the same emission factor for years prior to 2022 unfortunately does not take this improvement in performance into account.

This year, the specific heat network emission factor has been used as much as possible. Emission factors are available for large and medium-sized heat networks, but not for smaller heat networks. For the smaller networks, the average emission factor from [CO2emissiefactoren.nl](https://www.co2emissiefactoren.nl) for 2024 was used. The specific emission factor used for large and medium-sized heat networks can be found in Appendix B of this report.

## 2.5 Methodology development is an ongoing process

Comparability and transparency of carbon accounting require consistent disclosure, following the same guidelines and methods, and ideally using the same metrics.<sup>21</sup> However, the methodology for carbon accounting is not yet set in stone. As data availability improves and/or methodologies evolve, more accurate calculations become possible. Therefore, the total GHG footprint that is presented throughout this report is not conclusive. Each time the methodology and used data improve, the results of previous years are recalculated where possible, so that comparisons can be made over time.

As attention to the reduction of GHG emissions grows and more organisations report on their GHG footprint, there is an increasing demand for reliable data and key metrics. It is also becoming increasingly important that organisations within the same sectors use consistent standards. As a result, the development of sector-specific metrics and the public availability of data continues to progress. These developments are leading to better data and metrics across various sectors.

For this report, all developments have been closely monitored and improvements have been implemented wherever possible in the calculations of the GHG footprint. This year improvements were made for scopes 1 and to of municipalities and educational institutions and for the total healthcare sector.

For municipalities and educational institutions, the calculations now make use of key metrics from Vivet.<sup>22</sup> The inclusion of these figures introduces several enhancements to the carbon accounting methodology. Firstly, these standardised,

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<sup>21</sup> PCAF (2022). [The Global GHG Accounting and Reporting Standard Part A: Financed Emissions](#). Second edition.

<sup>22</sup> VIVET (n.d.). [Energieverbruik maatschappelijk vastgoed](#) (Dutch website).

sector-specific indicators support continuity and consistency in reporting across the sector. Furthermore, their national scope ensures broader recognition, as they are developed and validated through sector-wide collaboration.

In the healthcare sector, key metrics from the Environmental barometer are applied, offering sector-specific emission factors and benchmarks tailored to healthcare providers.

The GHG footprint for municipalities and educational institutions has also been recalculated for the years 2018 and 2023. For the healthcare sector this was not possible. As developments continue and the gap between reference year and most recent measurement increases and developments, as outlined, continue, it is unfortunately not always possible to recalculate the reference year 2018.

### 3 NWB Bank's loan portfolio

NWB Bank's loan portfolio includes several market segments. These segments cover several sectors or subsectors. Table 3-1 provides an overview of the loan portfolio for these sectors.

Table 3-1 Overview of NWB Bank's loan portfolio in 2018, 2023 and 2024<sup>23</sup>

Market segment	Sector	Total loan portfolio (million euro)			Coverage ratio by GHG footprint of total loan portfolio (%)		
		2018	2023 <sup>^</sup>	2024	2018	2023	2024
Social housing	Social housing associations	30,265	32,591	34,522	63.5	57.3	57.7
Public sector	Municipalities	6,583	5,901	5,764	13.8	10.4	9.6
	Provinces	247	340	317	0.5	0.6	0.5
	Water authorities	6,327	8,370	8,945	13.3	14.7	14.9
	Others	16	20	20	0.0	0.0	0.0
Healthcare	Healthcare	2,119	1,925	1,985	4.4	3.4	3.3
Education	Educational institutions	73	79	70	0.2	0.1	0.1
Networks & Utilities	Drinking water utilities <sup>#</sup>	477	1,214	1,445	1.0	2.1	2.4
Renewable energy	Renewable electricity	12	994	1,088	0.0	1.7	1.8
Financial counterparties	Credit institutions and other financial institutions	116	316	302	0.2	0.6	0.5
	NHG pass-through RMBS	0	2,638	2,864	0.0	4.6	4.8
Other	Other sectors	1,409	2,502	2,534	3.0	4.4	4.2
<b>Total</b>	<b>All sectors</b>	<b>47,644</b>	<b>56,892</b>	<b>59,855</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

<sup>^</sup>The current report does not include data for 2019, 2020, 2021 and 2022. It is decided to calculate 3 years: The reference year (2018) and the two most recent years, 2023 and 2024.

<sup>#</sup>For drinking water utilities, the reference year is not 2018, but 2020. Sector specific data are presented in chapter 9.

As can be seen in Table 3-1, the social housing associations, water authorities and municipalities represent the largest sectors within NWB Bank's loan portfolio. The total loan portfolio increased by 2,963 million euro between 2023 and 2024.

<sup>23</sup> Reference date for the year 2024 is 31-12-2024, reference date for the year 2023 is 31-12-2023, and reference date for the year 2018 is 31-12-2018.

The final overview of all the calculations for 2018, 2023 and 2024 can be found in the data files referenced in the factsheet below.

List of the calculation sheets	Location
250212 Bankcijfers NWB 2018.xlsx 250123 Bankcijfers NWB 2023.xlsx	\Werkmap\2_Data\2.1_Origineel met AVG\Leningportefeuille NWB\Cijfers uit rapportage 2024
Kopie van vergelijking portefeuille 2023 en 2024 coc.xlsx	\Werkmap\2_Data\2.1_Origineel met AVG\Leningportefeuille NWB

## 4 Social housing sector

### 4.1 Results Social housing sector

The social housing sector is the largest sector within the loan portfolio of NWB Bank. In 2024, the sector accounts for 57.7% of the bank's loan portfolio.

#### 4.1.1 Coverage ratio and attribution

The GHG footprint was calculated for 99.8% of the social housing loan portfolio in 2024. Between 2023 and 2024, the outstanding loan volume increased by 1,930 million euro. The loan portfolio of clients with a calculated GHG footprint increased by 1,948 million euro. Therefore, the coverage ratio increased by 0.1%-pt. The total balance sheet of clients with a calculated GHG footprint decreased. As a result, the ratio of the loan portfolio to the total balance sheet increased from 0.076 in 2023 to 0.084 in 2024. This means that the attribution to NWB Bank increased compared to last year. For 2018, 2023 and 2024, the loan portfolio, the total balance sheet and the coverage ratio are shown in Table 4-1.

Table 4-1 Loan portfolio, coverage ratio and ratio loan portfolio versus total balance sheet for the social housing sector in 2018, 2023 and 2024.

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro) <sup>&amp;</sup>	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro) <sup>^</sup>	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated
2018	30,265	63.5	29,383	97.1	307,574	0.10
2023	32,591	57.3	32,490	99.7	428,879	0.08
2024	34,522	57.7	34,438	99.8	411,786	0.08

<sup>^</sup> For 2023, total balance sheet data from 2022 were used, and for 2024, total balance sheet data from 2023 were used. This was because more recent data were not available in time for the calculations for each respective year.

<sup>&</sup> To make sure that the coverage ratio for all three years is comparable, the loans and total balance sheet of social housing associations that have merged in the past few years have been summed and it is assumed that the energy consumption of the merged social housing associations are the same as the sum of the original ones.

## 4.1.2 Financed GHG emissions

Table 4-2 shows the calculated GHG footprint results for the social housing sector in 2018, 2023 and 2024. The total consumption of natural gas increased and the total consumption of electricity decreased between 2023 and 2024 (data not shown). The emission factors for natural gas and electricity from an unknown source also decreased (Appendix A). The ratio of loan portfolio to total balance sheet per client affects the financed GHG emission at sector level. These changes all affect the financed GHG emissions.

Tabel 4-2 Absolute and relative financed GHG emissions for the social housing sector in 2018, 2023 and 2024

Source of emissions	Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)			Financed GHG emissions (%)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)		
		2018	2023	2024	2018	2023	2024	2018	2023	2024
Natural gas use	1	303,968	216,594	248,718	62.5	67.9	70.6	10.3	6.7	7.2
Electricity use	2	171,496	95,700	95,284	35.3	30.0	27.1	5.8	2.9	2.8
District heating	2	10,549	6,556	8,200	2.2	2.1	2.3	0.4	0.2	0.2
<b>Total</b>	<b>1-2</b>	<b>486,014</b>	<b>318,850</b>	<b>352,202</b>	<b>100.0*</b>	<b>100.0*</b>	<b>100.0*</b>	<b>16.5</b>	<b>9.8</b>	<b>10.2</b>

\*The sum in these columns is not always exactly 100% due to rounding per sector

Table 4-4 Financed GHG emissions per financed floor area (m<sup>2</sup>) for the social housing sector in 2018, 2023 and 2024

Year	Financed GHG emissions real estate related (kgCO <sub>2</sub> e) / financed m <sup>2</sup>
2018	29.0
2023	22.0
2024	22.3

Between 2023 and 2024, the financed GHG emissions increased for scope 1 natural gas consumption by 32,124 tonnes and decreased for scope 2 electricity consumption by 416 tonnes. Scope 2 district heating increased by 1,644 tonnes. Total financed GHG emissions increased by 33,352 tonnes. This increase is mainly due to the increase in scope 1 natural gas consumption. The financed GHG emissions per financed m<sup>2</sup> increased by 0.3 kgCO<sub>2</sub>e/m<sup>2</sup>. This is in line with the increase in total energy consumption (data not shown). As developments continue and the gap between reference year and most recent measurement increases.

In conclusion, the absolute and relative financed GHG emissions for the social housing sector increased between 2023 and 2024. The decrease in energy prices may have led to increased energy consumption by households.

Several policy and regulatory initiatives aim to reduce energy use and associated emissions in housing associations. By the end of 2028, homes will no longer be allowed to have an energy label of E, F, or G.<sup>24</sup> By 2034, 450,000 existing properties must be gas-free, which will require alternative sources of heating. By 2050, all housing association stock must be gas-free. To meet these targets, social housing providers are working hard to improve insulation and reduce energy consumption. However, results indicate that significant challenges remain

## 4.2 Social housing sector approach

### 4.2.1 Scopes 1 and 2

#### General factsheet

##### Scopes covered

For the social housing sector, scopes 1 and 2 are covered. Scope 1 covers natural gas consumption and scope 2 covers electricity and district heating consumption.

##### Portfolio covered

The social housing coverage ratio is 99.8% for 2024.

##### Data

Data on electricity and natural gas consumption are based on the connection registers from the three largest network operators in the Netherlands: Enexis, Liander, and Stedin. Due to privacy legislation, it is not possible to collect these data for individual dwellings. The data are therefore collected for small clusters of similar dwellings. The data are disaggregated to the level of a housing association.

The housing association's property data source is 'Kadaster'.<sup>25</sup>

The source for the floor area data is the Basic Registration of Addresses and Buildings (BAG).

Data on the presence of district heating comes from a data inventory performed by Republiq.

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<sup>24</sup> Aedes (2024). [Nationale prestatieafspraken 2025-2035](#) (Dutch article).

<sup>25</sup> The Kadaster maintains registers of all real estate in the Netherlands, including land and buildings, detailing ownership and other rights.

Consumption data of district heating are based on the connection registers of the energy network operators, collected by Statistics Netherlands (CBS). It is based on actual energy consumption and is therefore reliable. District heating consumption is available at the level of municipalities. For each municipality, the district heating consumption by dwellings owned by the social housing associations is known.

### **Grid emission factors**

Section 2.4 provides further information on emission factors.

The following emission factors from Appendix A have been used:

- Natural gas
- Electricity (unknown source)
- Average heating networks

In addition, for some heating networks their own emission factors are used (see Appendix B).

### **Calculation steps**

#### *Scope 1 natural gas use & scope 2 electricity use*

The following steps have been taken by Republiq:

1. Inventory of dwellings owned by social housing associations
2. Joining energy consumption data

1. Inventory of dwellings owned by social housing associations  
Republiq has acquired the housing association's property data from 'Kadaster'. For each housing association Republiq knows the number of dwellings it owns, the floor area of each dwelling, and the energy class to which it belongs. Republiq has calculated the number of dwellings owned by each housing association and the total floor area of these dwellings. From NWB, Republiq obtained an overview of which housing associations are clients according to the loan portfolio as of 31-12-2024. Republiq combined this list from NWB with data from 'Kadaster' to add the number of dwellings and floor area owned by each housing association, where possible.

2. Joining energy consumption data  
Energy consumption data were requested from the three largest network operators (Enexis, Liander, and Stedin) in the Netherlands. For privacy reasons, the network operators are not allowed to provide energy consumption data for individual buildings. However, data for clusters of buildings (10 to 15 buildings) can be provided: per cluster the standard

annual consumption (in Dutch 'standaard jaarafname' (SJA)<sup>26</sup>) has been provided. Republiq has divided the annual energy consumption data by the average floor area of the buildings in a cluster to obtain energy consumption data per m<sup>2</sup>. The energy consumption data per m<sup>2</sup> were assigned to the individual dwellings in a cluster. Republiq then performed an outlier check to ensure that only reliable data remained. The average energy consumption data per m<sup>2</sup> per housing association is multiplied by the total floor area owned by the housing association to obtain an estimate of the total consumption of electricity and gas. Republiq also provided an estimate of the electricity fed back into the grid.

Republiq provided Het PON & Telos with the following data per social housing association for the calculation of GHG emissions:

- Total electricity consumption (in kWh)
- Total gas consumption (in Nm<sup>3</sup>)
- Total electricity fed back in the grid (kWh)
- Floor area (m<sup>2</sup>)

The next step was carried out by Het PON & Telos:

Het PON & Telos used these data to make the final calculations for both scope 1 natural gas consumption and scope 2 electricity consumption. The total electricity and natural gas consumption was multiplied by the emission factor from the same year as the data. For scope 1 natural gas consumption the emission factor natural gas (Nm<sup>3</sup>) was used. For scope 2 electricity consumption the emission factor electricity (unknown source) (kWh) was used.

### **Floor area**

The source for the floor area data is the Basic Registration of Addresses and Buildings (BAG). The reference date for the total floor area per housing association for the 2024 calculations is 1-1-2025. To calculate the financed GHG emissions per financed m<sup>2</sup> the total financed GHG emissions in tCO<sub>2</sub>e for the social housing sector are divided by the total financed floor area (m<sup>2</sup>) of the social housing sector.

### ***Scope 2: District heating***

The consumption of district heating per social housing association is not known. It was therefore necessary to make an estimate. The calculation consists of a few steps.

The CBS Microdata contains information on the use of district heating by all Dutch houses. Within the CBS Microdata database, [this dataset](#) was combined with

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<sup>26</sup> 'Standaard jaarafname' is the actual energy consumption recalculated to the expected energy consumption in a standard year. The actual energy consumption is corrected for a warmer or colder year, energy in one m<sup>3</sup>, and the gas pressure.

another dataset containing information on the owners of these houses. Only dwellings owned by social housing associations were included in the calculation. CBS defines a dwelling as: the smallest unit within one or more buildings that is suitable for living in and is accessible through a private entrance from the public street, a yard or a common area. Examples include detached dwellings, single-family dwellings, apartments or terraced dwellings and student accommodations.

A dwelling is considered to be any residential property in the Basic Register of Addresses and Buildings (BAG) with at least one residential function and possibly one or more other functions. Thus, both self-contained and non-self-contained dwellings are included in these data.

For each municipality, district heating consumption was calculated for all dwellings owned by social housing associations. Outside the CBS Microdata database, district heating consumption was calculated for each social housing association. To calculate this, data from Republiq has been used. Republiq has obtained the property data of the housing associations from 'Kadaster'. For each housing association, Republiq estimated the number of dwellings it owns that is connected to district heating. These data were used to create the distribution key that allocates the GJ of district heating per municipality to the different housing associations.

The consumption of district heating per municipality for all dwellings owned by social housing associations was multiplied by the ratio of the number of dwellings with district heating of a given social housing association to the total number of dwellings with district heating of all social housing associations in a municipality. For each social housing association, the district heating consumption per municipality was added to give the total district heating consumption for that particular social housing association.

The use of district heating in GJ was multiplied by the emission factor for the specific heat network (large heat networks and only one per municipality) or the average heating networks (source: CO2emissiefactoren.nl) to obtain kg of GHG emissions. These emissions were divided by 1,000 to obtain tonnes of GHG emissions.

After calculating scope 1 and scope 2 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loan to total balance sheet is 25%, 25% of the social housing association's scope 1 and 2 GHG emissions are attributed to NWB. The financed GHG emissions per client are added up to result in the total financed GHG emissions per sector.

Unfortunately, the 2024 total balance sheet data were not available at the time of these calculations. Therefore, the financed GHG emissions for 2024 have been calculated based on the total balance sheet for 2023.

To make sure that the coverage ratio for all three years is comparable, the loans and total balance sheet of social housing associations that have merged in the past few years have been summed and it is assumed that the energy consumption of the merged social housing associations are the same as the sum of the original ones.

The financed GHG emissions and relative financed emissions are reported per scope. The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

### **Avoided emissions**

If housing associations generate their own electricity, for example through solar panels, and use it directly, this energy consumption is not included in the calculation of GHG emissions or avoided emissions.

Self-generated electricity that is fed back into the grid represents avoided emissions. For the housing associations in the NWB's portfolio, this amounts to 491,816,541 kWh of electricity and 15,709 tonnes financed GHG emissions for 2024.

These data were provided by Republiq per housing association and the kWh was multiplied by the grey energy emission factor for 2024 and the ratio of loans to total balance sheet to result in the avoided financed emissions.

### **Asset class specific considerations**

For the calculation based on energy consumption data, the approach for the social housing associations is in line with the approach of asset class 'Mortgages'. Energy consumption of financed buildings (scope 1 and 2) is covered.

### **Attribution**

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

### **Absolute vs. relative emissions**

For the social housing sector, the total financed GHG emissions were calculated in tonnes CO<sub>2</sub>eq.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for which a GHG footprint was calculated in this report.

The relative financed emissions in tCO<sub>2</sub>e / m<sup>2</sup> were calculated by dividing the financed GHG emissions by the attributed m<sup>2</sup> of the clients for which a GHG footprint was calculated in this report.

### **Limitations**

For several social housing associations data on the total balance sheet were not available. For these associations, the total balance sheet was calculated based on the average ratio outstanding loan volume / total balance sheet. However, this may have been over- or underestimated.

#### ***Scope 1 natural gas use & scope 2 electricity use***

Some of the housing associations in NWB Bank's loan portfolio were not included in Republiq's data set because these housing associations are not members of the Aedes trade association. For those housing associations that are not members of the Aedes trade association, property data has not been retrieved from Kadaster. Therefore, no data are available on the number of dwellings and floor area owned.

Energy consumption data were only collected from the three largest network operators. No data are available for housing associations operating outside the regions in which these operators are active.

For privacy reasons it is not possible to collect energy consumption data for individual dwellings. Data has been collected for small clusters of comparable dwellings within a housing association. These data have been aggregated to the housing association level.

For energy consumption, the standard annual consumption (in Dutch 'standaard jaarafname'(SJA) was used. 'Standaard jaarafname' is the actual energy consumption recalculated to the expected energy consumption in a standard year. The actual energy consumption is adjusted for annual temperature variations, energy density per m<sup>3</sup> and gas pressure.

#### ***Scope 2 District heating***

Unfortunately, Het PON & Telos does not have data on the allocation of dwellings to specific social housing associations. Therefore, the district heating per social housing association had to be estimated based on the ratio of the number of dwellings per social housing association with district heating to the total number of

dwelling of all social housing associations with district heating in a municipality. Factors such as the type of dwelling are not considered in the allocation key. The accuracy of the data can be improved by identifying which dwellings are owned by specific social housing associations. However, these data are not available. This will not affect the total GHG emissions of the sector but will affect the sector level GHG emissions attributed to the Bank.

The most recent data available from CBS on district heat consumption from a social housing association is for the year 2023. Therefore, the data on heat consumption from a heat network used in this report is from 2023 instead of 2024.

The GHG emissions of the social housing associations themselves (scopes 1, 2, and 3) are not included in this report.

### **Data quality estimate**

#### ***Scope 1 natural gas use & scope 2 electricity use***

The data quality score is 2.

Primary data on actual building energy consumption (adjusted for annual temperature variations, energy density per m<sup>3</sup> and gas pressure) are available. According to option 1b in Table 5-14 on page 92 of the PCAF (2022) report<sup>27</sup>, the data quality is 2.

Part of the data are based on energy consumption data provided by the three largest energy suppliers in the Netherlands for clusters of buildings. Due to privacy regulations, it is not possible to collect these data for individual dwellings. The data are therefore collected for small clusters (10 to 15 buildings) of similar dwellings, which is sub-sector specific. The data has been aggregated to the level of a housing association. However, as the energy consumption data are more specific than sector specific, the data score is 2.

#### ***Scope 2 District heating***

For the outstanding loans to this sector where district heating applies, the data quality score is 2. Primary data on actual heat consumption per building is available and has been aggregated at the level of housing associations. The number of dwellings connected to district heating networks is known for each housing association and each municipality. In addition, consumption data for district heating is available per dwelling and has been aggregated to the municipal level before being allocated to the relevant portfolios. As these data are more specific than sector-level information and are based on actual energy consumption

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<sup>27</sup> PCAF (2022). [The Global GHG Accounting and Reporting Standard Part A: Financed Emissions](#). Second edition.

per building, the data quality is assessed as score 2 in line with option 1b in Table 5-14 on page 92 of the PCAF (2022) report.

The emission factors used are specific to the major district heating networks. Although the data are not verified by an external auditor, they are calculated at the level of individual housing associations (i.e. institution-specific) and therefore meet the criteria for data quality score 2.

### Calculation sheets

The final overview of all the calculations for 2024 can be found in the data files mentioned in the factsheet below.

List of the calculation sheets	Location
bNWB.tWOCO_Leningportefeuille.csv bCBSMicordata.tWOCO_Stadsverwarming_versie2025 bCO2Emissiefactoren.tEmissiefactorenStadsw2023 bDVI.tWOCO_Passiva_NWB bRepubliq.tNWB_WOCO_Enerigevebruik_versie2025  emissiefactoren - PCAF 2025.csv	\Werkmap\Woningcorporaties\d. Data voor SQL         \Werkmap\Emissiefactoren\c. Voorbewerkte data
250829_NWB_WOCO_2024_versie2025.ipynb	\Werkmap\Woningcorporaties\e. SQL notebooks
251021 pNWB.tWOCO_2024_CO2voetafdruk_Absoluut_Totaal_versie2025.xlsx 251021 pNWB.tWOCO_2024_CO2voetafdruk_Relatief_Totaal_versie2025.xlsx 251021 pNWB.tWOCO_2024_IndividueleKlanten_versie2025.xlsx 251021 pNWB.tWOCO_2024_Ratio_Lening_Passiva_versie2025.xlsx	\Werkmap\Woningcorporaties\f2. Data uit SQL BNG

## 5 Public sector: water authorities

### 5.1 Results public sector: water authorities

In 2024, water authorities represent 14.9% of NWB Bank's total loan portfolio, making them the second-largest sector within the bank's loan portfolio.

#### 5.1.1 Coverage ratio and attribution

It was possible to provide all water authorities with a calculated GHG footprint, resulting in a 100% coverage ratio. The outstanding loan volume has increased over the years. Between 2023 and 2024 the outstanding loan volume increased by 575 and the total balance sheet of clients with a calculated GHG footprint increased by 425 million euro. As a result, the ratio of the loan portfolio to the total balance sheet increased. For 2018, 2023 and 2024, the loan portfolio, the total balance sheet and the coverage ratio are shown in Table 5-1.

Table 5-1 Loan portfolio, coverage ratio and ratio loan portfolio versus total balance sheet for the water authorities in 2018, 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated
2018	6,327	13.3	6,327	100.0	9,327	0.68
2023	8,370	14.7	8,370	100.0	11,966	0.70
2024	8,945	14.9	8,945	100.0	12,391	0.72

## 5.1.2 Financed GHG emissions

Table 5-2 shows the calculated GHG footprint results for water authorities in 2018, 2023<sup>28</sup> and 2024.

Table 5-2 Absolute and relative financed GHG emissions for the water authorities in 2018, 2023 and 2024

Systems	Source of emissions	Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)			Financed GHG emissions (%)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)		
			2018	2023	2024	2018	2023	2024	2018	2023	2024
Water treatment management	Natural gas use	1	3,151	1,955	1,228	0.4	0.4	0.2	0.5	0.2	0.1
	Other fuels	1	710	62	108	0.1	0.0	0.0	0.1	0.0	0.0
Water systems	Natural gas use	1	1,566	1,127	734	0.2	0.2	0.1	0.2	0.1	0.1
	Other fuels	1	1,783	1,433	1,110	0.2	0.3	0.2	0.3	0.2	0.1
Other	Natural gas use	1	1,663	1,194	1,249	0.2	0.2	0.2	0.3	0.1	0.1
	Other fuels	1	1	1	3	0.0	0.0	0.0	0.0	0.0	0.0
-	Own mobility, transport and maintenance	1	12,348	5,759	6,703	1.6	1.1	1.3	2.0	0.7	0.7
-	GHG sewage treatment plant	1	390,239	396,283	419,971	51.2	77.4	79.5	61.7	47.3	47.0
Water treatment management <sup>^</sup>	Electricity	2	271,761	33,394	28,228	35.7	6.5	5.3	43.0	4.0	3.2
	Heat	2	2,248	1,302	1,482	0.3	0.3	0.3	0.4	0.2	0.2
Water systems <sup>^</sup>	Electricity	2	-	11,495	6,536	-	2.2	1.2	-	1.4	0.7
	Heat	2	-	0	0	-	0.0	0.0	-	0.0	0.0
Other <sup>^</sup>	Electricity	2	-	993	885	-	0.2	0.2	-	0.1	0.1
	Heat	2	-	116	39	-	0.0	0.0	-	0.0	0.0
-	Own mobility, transport and maintenance <sup>#</sup>	2	-	96	78	-	0.0	0.0	-	0.0	0.0
-	Commuting	3	11,195	6,923	6,734	1.5	1.4	1.3	1.8	0.8	0.8
-	Outsourced transport and maintenance	3	31,817	23,680	26,870	4.2	4.6	5.1	5.0	2.8	3.0
-	Materials and raw materials	3	33,545	26,090	26,172	4.4	5.1	5.0	5.3	3.1	2.9
-	<b>Total</b>	<b>1-2-3</b>	<b>762,026</b>	<b>511,903</b>	<b>528,127</b>	<b>100.0*</b>	<b>100.0*</b>	<b>100.0*</b>	<b>120.4</b>	<b>61.2</b>	<b>59.0</b>
-	<b>Total</b>	<b>1-2</b>	<b>685,470</b>	<b>455,210</b>	<b>468,352</b>	<b>90.0</b>	<b>88.9</b>	<b>88.7</b>	<b>108.3</b>	<b>54.4</b>	<b>52.4</b>

<sup>28</sup> Compared with the 2023 report, the figures have been slightly adjusted following corrections to the source data.

– means no data are available.

<sup>^</sup>For 2018 the indirect GHG emissions for water treatment management, water systems, and other within scope 2 are reported as one value under Water treatment management electricity and heat.

<sup>#</sup>Own mobility, transport, and maintenance were not in the data of 2018.

<sup>\*</sup>The sum in these columns is not always exactly 100% due to rounding per sector.

Between 2023 and 2024 the absolute GHG emissions decreased for the following scopes: the segments ‘water treatment management’ and ‘water systems’ of scope 1, all segments of scope 2 and the segment ‘commuting’ of scope 3. The decrease in scope 2 financed GHG emissions is the result of a decrease in electricity usage and a shift from purchasing European green electricity to Dutch green electricity<sup>29</sup>.

Overall, the absolute financed GHG emissions increased by 16.224 tonnes CO<sub>2</sub>. This is mainly due to an increase in scope 1 and particularly due to the segment ‘GHG sewage treatment plant’. Two underlying factors within this segment are methane and nitrous oxide. Both of these increased in absolute terms, despite efforts taken by water authorities to achieve reduction<sup>30</sup>. As discussed previously, the attribution factor (the ratio of the outstanding loan to total balance sheet) of the sector increased. In particular the attribution factor of one client almost doubled compared to 2023, contributing vastly to the increase in absolute emissions. Important to note is that the relative financed GHG emissions for all scopes decreased by 2.1 tCO<sub>2</sub>e per million euro. Even for scope 1 and for the segment ‘GHG sewage treatment plant’ - which show a big increase in absolute financed emissions - the relative financed emissions decreased.

The ‘Klimaatmonitor Waterschappen, verslagjaar 2024’ (Arcadis, 2025)<sup>31</sup> confirms ongoing progress in sustainable energy production and emissions management since 2018.

## 5.2 Public sector: water authorities’ approach

### 5.2.1 Scopes 1, 2 and 3

The ‘Klimaatmonitor waterschappen, verslagjaar 2024’<sup>32</sup> forms the basis for the calculations of water authorities. This monitor was developed by Arcadis for the Unie van Waterschappen and the NWB Bank. This monitor describes in detail the emissions per scope and per individual water authority. The description of this

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<sup>29</sup> Arcadis (2025). [Klimaatmonitor Waterschappen Verslagjaar 2024](#) (Dutch article).

<sup>30</sup> Ibid.

<sup>31</sup> Ibid.

<sup>32</sup> Ibid.

approach is therefore brief. More information can be found in the ‘Klimaatmonitor waterschappen, verslagjaar 2024’<sup>33</sup>.

### Adjustments in methodology

For the year 2023 some (minor) adjustments have been made in the numbers for some emission sources by Arcadis, resulting in a recalculation of the 2023 emissions. Methane and nitrous oxide numbers of 2023 has been finalised by the Central Bureau of Statistics. As a result, three emission sources changed for 2023 in comparison to last year calculations: GHG emission from the sewage plant (scope 1), outsourced transport and maintenance (scope 3) and materials and raw materials (scope 3).

Table 5-3 Effect of change in methodology on the GHG emissions in tCO<sub>2</sub>e

Source of emissions	Scopes	New 2023	Previous 2023	Difference (%) *
GHG sewage treatment plant	1	396,283	394,930	0.34
Outsourced transport, and maintenance	3	23,680	24,888	-4.86
Materials and raw materials	3	26,090	22,793	14.46

\*The difference is calculated with the following formula: (New-Previous)/Previous\*100

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<sup>33</sup> Ibid.

## General factsheet

### Scopes covered

The report ‘Klimaatmonitor waterschappen, verslagjaar 2024’<sup>34</sup> covers all three scopes in detail. Table 5-4 shows the underlying themes of the scopes. All scopes presented by Arcadis in the report ‘Klimaatmonitor Waterschappen, verslagjaar 2024’<sup>35</sup> in Table 1 are also used for this report.

Table 5-4 The different scopes included in the water authorities’ approach

Direct or indirect emissions	Source of emissions	Scopes
Direct GHG emissions	Water treatment management	1
	Water systems	1
	Other	1
	Own mobility, transport and maintenance	1
	GHG emissions of the sewage treatment plant	1
Indirect GHG emissions	Water treatment management	2
	Water systems	2
	Other	2
	Own mobility, transport and maintenance	2
	Commuting	3
	Outsourced transport and maintenance	3
	Materials and raw materials	3

### Portfolio covered

Data are collected for all 21 water authorities in the Netherlands; the portfolio coverage ratio is 100%.

### Data

Data were used from the report ‘Klimaatmonitor Waterschappen, verslagjaar 2024’<sup>36</sup>. This monitor was developed by Arcadis for the Union of Water Boards (Unie van Waterschappen) and NWB Bank. This monitor describes in detail the emissions in the three scopes for each individual water authority.

For the report ‘Klimaatmonitor Waterschappen, verslagjaar 2024’<sup>37</sup> the calculations were made by using emission factors based on ‘well to wheel’ (WTW). The PCAF

<sup>34</sup> Ibid.

<sup>35</sup> Ibid.

<sup>36</sup> Arcadis (2025). [Klimaatmonitor Waterschappen Verslagjaar 2024](#) (Dutch article).

<sup>37</sup> Ibid.

methodology prescribes the use of ‘tank to wheel’ (TTW) based emission factors. Therefore, Arcadis provided Het PON & Telos with the data from the ‘Klimaatmonitor Waterschappen, verslagjaar 2024’<sup>38</sup> calculated based on ‘tank to wheel’ (TTW) emission factors.

Arcadis obtained the data from the water boards by means of a questionnaire that collected both quantitative and qualitative data.

The data on the total balance sheet per water authority comes from the WAVES database and is provided to the Unie van Waterschappen by the water authorities themselves.

### **Grid emission factors**

The ‘Klimaatmonitor Waterschappen, verslagjaar 2024’<sup>39</sup> uses emission factors from [www.CO2emissiefactoren.nl](http://www.CO2emissiefactoren.nl). The only difference is that the monitor uses the ‘well to wheel’ (WTW) factors, and not the ‘tank to wheel’ factors (TTW). The PCAF harmonised approach prescribes the use of the TTW values. Therefore, Arcadis has provided Het PON & Telos with the data from the ‘Klimaatmonitor Waterschappen, verslagjaar 2024’<sup>40</sup> calculated based on ‘tank to wheel’ (TTW) emission factors.

### **Calculation steps**

The GHG emissions based on TTW emission factors were summed up to obtain the categories per scope that are shown in Table 5-4. The exact calculation steps per scope can be found in the Arcadis report.<sup>41</sup>

After calculating scopes 1, 2 and 3 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loans to total balance sheet is 25%, 25% of the water boards’ scope 1 and 2 GHG emissions are attributed to NWB. The financed GHG emissions per client are added up to result in the total financed GHG emissions per sector.

The financed GHG emissions and relative financed emissions are reported per scope. The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

### **Avoided emissions**

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<sup>38</sup> Ibid.

<sup>39</sup> Arcadis (2025). [Klimaatmonitor Waterschappen Verslagjaar 2024](#) (Dutch article).

<sup>40</sup> Ibid.

<sup>41</sup> Ibid.

Data on renewable energy use per water authority are available in the Arcadis report.<sup>42</sup>

### **Asset class specific considerations**

The approach for water authorities is in line with the public loan approach in the PCAF methodology.

### **Attribution**

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\textit{Outstanding loan volume}}{\textit{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

### **Absolute vs. relative emissions**

For the water authorities, the total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for which a GHG footprint was calculated in this report.

### **Limitations**

Not all scope 3 emissions are yet monitored by the water authorities.

### **Data quality estimate**

The data quality score is 2, the GHG emissions are calculated based on data provided by the water boards themselves, but the data are not audited.

The data quality score for scope 1 GHG emissions from the sewage treatment plant is 3. The GHG emissions of methane and nitrous oxide from sewage treatment plants were calculated based on an IPCC model. This does not consider the individual situation of the sewage treatment plants. However, the data are sector specific.

### **Calculation sheets**

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<sup>42</sup> Ibid.

The final overview of all the calculations for 2023 and 2024 can be found in the data files mentioned in the factsheet below.

List of the calculation sheets	Location
250915_Waterschappen_NWB_bank_ver slagjaar2023.xlsx	Werkmap\Waterschappen\f3. Berekening NWB
250915_Waterschappen_NWB_bank_ver slagjaar2024.xlsx	Werkmap\Waterschappen\f3. Berekening NWB

## 6 Public sector: municipalities

### 6.1 Results public sector: municipalities

In 2024, municipalities represent 9.6% of NWB Bank's total loan portfolio, making them the third-largest sector within the bank's loan portfolio.

#### 6.1.1 Coverage ratio and attribution

It has been possible to provide all municipalities with a calculated GHG footprint. Between 2023 and 2024, the outstanding loan volume decreased by 138 million euro. The total balance sheet of clients with a calculated GHG footprint increased. As a result, the ratio of the loan portfolio to the total balance sheet decreased, from 0.072 in 2023 to 0.067 in 2024. This means that the attribution to NWB Bank decreased compared to last year. For 2018, 2023 and 2024, the loan portfolio, the total balance sheet and the coverage ratio are shown in Table 6-1.

Table 6-1 Loan portfolio, coverage ratio and ratio loan portfolio versus total balance sheet for the municipalities in 2018, 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated*
2018	6,583	13.8	6,583	100.0	72,001	0.09
2023	5,901	10.4	5,901	100.0	82,442	0.07
2024	5,764	9.6	5,764	100.0	85,818	0.07

#### 6.1.2 Financed GHG emissions

Table 6-2 shows the calculated GHG footprint results for the Dutch municipalities in 2018, 2023 and 2024. The consumption of natural gas decreased and electricity consumption increased between 2023 and 2024 (data not shown). The emission factors for natural gas and electricity (unknown source) decreased (Appendix A).

Furthermore, the attribution to NWB Bank decreased. These changes all affect the financed GHG emissions.

**Table 6-2 Absolute and relative financed GHG emissions for municipalities in 2018, 2023 and 2024**

Source of emissions	Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)			Financed GHG emissions (%)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)		
		2018	2023	2024	2018	2023	2024	2018	2023	2024
Natural gas use	1	29,091	22,043	20,852	13.7	11.9	11.5	4.4	3.7	3.6
Fossil fuel use (cars)	1	955	546	588	0.5	0.3	0.3	0.1	0.1	0.1
Electricity use	2	19,020	13,647	13,681	9.0	7.4	7.6	2.9	2.3	2.4
Purchased goods and services	3	163,065	148,663	145,784	76.9	80.4	80.6	24.8	25.2	25.3
<b>Total</b>	<b>1-2-3</b>	<b>212,131</b>	<b>184,898</b>	<b>180,905</b>	<b>100.0*</b>	<b>100.0*</b>	<b>100.0*</b>	<b>32.2</b>	<b>31.3</b>	<b>31.4</b>
<b>Total</b>	<b>1-2</b>	<b>49,066</b>	<b>36,235</b>	<b>35,121</b>	<b>23.1</b>	<b>19.6</b>	<b>19.4</b>	<b>7.5</b>	<b>6.1</b>	<b>6.1</b>

\*The sum in these columns is not always exactly 100% due to rounding per sector

**Table 6-3 Financed GHG emissions per financed floor area (m<sup>2</sup>) for the municipalities in 20218, 2023 and 2024**

Year	Financed GHG emissions real estate related (kgCO <sub>2</sub> e) / financed m <sup>2</sup>
2018	35.4
2023	23.9
2024	22.3

Between 2023 and 2024 the financed GHG emissions decreased for scope 1 natural gas consumption and scope 3 purchased goods and services. Scope 1 fossil fuel use and scope 2 electricity consumption slightly increased. As mentioned above, the total consumption of natural gas decreased and the total consumption of electricity increased between 2023 and 2024. Overall, the ratio loan portfolio to total balance sheet decreased between 2023 and 2024. These changes resulted in a slight increase in financed GHG emissions for electricity consumption, but a decrease in financed GHG emissions for natural gas consumption. Financed GHG emissions per m<sup>2</sup> financed decreased by 1.6 kgCO<sub>2</sub>e/m<sup>2</sup>.

The total financed GHG emissions decreased by 3,993 tCO<sub>2</sub>e. This decrease is mainly due to a decrease in scope 3 GHG emissions, which decreased by 2,879 tonnes. The scope 3 change is due to a decrease in the emission factor per sector

and due to an increase in the expenditure on procurement of goods and services between 2023 and 2024, but the financed GHG emissions are also affected by the ratio of the loan portfolio to total balance sheet on client level.

The relative GHG emissions increased by 0.1 tonnes per million euro. This is mainly due to the fact that total GHG emissions did not decrease proportionally with the loan volume, and due to the increase in Scope 2 emissions.

## 6.2 Public sector: municipalities approach

### 6.2.1 Scopes 1 and 2

#### Adjustments in methodology

To estimate energy consumption, Republiq uses key figures provided by Vivet.<sup>43</sup> These figures became available this year for 2022 and 2023. As the methodology differs from that used in previous years, the GHG emissions for 2018 and 2023 have also been recalculated using these updated figures. For 2018 and 2024, an estimate has been made based on the trends in energy consumption as published by CBS.<sup>44</sup>

The differences between the results of the new and previous methodology are shown in Table 6-4.

Table 6-4 Effect of change in methodology on the GHG emissions in tCO<sub>2</sub>e

Source of emissions	Scopes	New	Previous	Difference (%) *	New	Previous	Difference (%) *
		2023	2023	2023	2018	2018	2018
Natural gas use	1	22.043	32.681	-32.6	29,091	37,945	-23,3
Electricity use	2	13.647	18.794	-27.4	19,020	29,379	-35,3

\*The difference is calculated with the following formula: (New-Previous)/Previous\*100

<sup>43</sup> VIVET (n.d.). [Energieverbruik maatschappelijk vastgoed](#) (Dutch website).

<sup>44</sup> CBS (2025). [Energiebalans: aanbod en verbruik, sector](#) (Dutch website).

## General factsheet scopes 1 and 2

### Scopes covered

For municipalities, scope 1 natural gas consumption, scope 1 fossil fuel use by company cars, scope 2 electricity consumption and scope 3 purchased goods and services are covered.

### Portfolio covered

Data are collected for all municipalities in the Netherlands. This means that the coverage ratio for this sector is 100%.

### Data

For scope 1 natural gas consumption and scope 2 electricity consumption, 2024 data were used. For scope 1 fossil fuel consumption of company cars, the calculation was made with partial use of 2023 data.

The data used in this approach comes from several sources.

For scope 1 natural gas consumption and scope 2 electricity consumption, energy consumption data for buildings owned by municipalities were used. Republiq provided the energy consumption data to Het PON & Telos. When specific information on building function or construction was not available, Republiq used estimates based on similar building types and characteristics.

Het PON & Telos calculated the GHG emissions for scope 1 fossil fuel consumption of company cars, using several data sources. Ideally, the litres of fuel consumed, or kilometres driven by the company cars would be multiplied by the corresponding emission factor to obtain the GHG emissions of company cars. However, data on fuel consumption or kilometres driven are not available for each individual municipality, but only in total for all municipalities. Therefore, a calculation was made to estimate the GHG emissions of company cars by using several data sources. The data used for this calculation are summarised in this section. More information on the calculation can be found in the calculation steps section.

The data on the number of employees working for SBI-code 8411 (general government administration, which includes municipalities, as well as provinces and ministries) and the data on the number of employees working for the entire public administration and government services sector come from Lisa. Lisa serves as the national information system on jobs in the Netherlands and maintains a comprehensive database with information on all places where paid work is performed. The data are provided based on the 2024 municipality classification. Consequently, all other data used were reclassified to match the 2024 municipality classification to ensure coverage of all municipalities present in the Lisa dataset.

Data on the number of employees working for the provincial government organisation come from 'A&O fonds provincies'. 'A&O fonds provincies' is an organisation that provides governments with practical tools, knowledge and subsidies. These data are available at the aggregated level of the provinces.

Data on the number of passenger cars owned by enterprises per sector come from the Dutch Central Bureau of Statistics (CBS). The data originate from the vehicle register (RDW), which ensures their reliability and accuracy.

Data on the number of kilometres travelled by car per year comes from the Dutch Central Bureau of Statistics (CBS) and covers the average number of kilometres travelled per year by a passenger car registered in the Netherlands. The original data come from the RDW's Online Kilometre Registration (OKR), which ensures its reliability.

### **Grid emission factors**

Section 2.4 contains more information on emission factors. The following emission factors from Appendix A have been used:

- Natural gas
- Electricity (unknown source)
- Passenger transport, Car, Fuel type unknown, weight class unknown.

### **Calculation steps**

#### *Scope 1 natural gas use & scope 2 electricity use*

The following steps have been performed by Republiq:

1. Inventory of buildings owned by municipalities
  2. Estimate energy consumption data
1. Inventory of buildings owned by municipalities

Republiq has a dataset called 'dataset maatschappelijk vastgoed'. This dataset contains all buildings owned by municipalities and/or used for public purposes such as education, sports, welfare and culture. Republiq filtered out all buildings owned by municipalities. Republiq has acquired the property data from 'Kadaster'.<sup>45</sup>

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<sup>45</sup> The Kadaster maintains registers of all real estate in the Netherlands, including land and buildings, detailing ownership and other rights.

## 2. Estimate energy consumption data

To estimate energy consumption, Republiq uses key figures provided by Vivet.<sup>46</sup> In the Vivet project, CBS and Kadaster collaborated to provide insights into energy consumption across various sectors of public real estate. The key figures are available for the years 2022 and 2023. For 2024 and 2018, an estimate has been made on the trends in energy consumption as published by CBS.<sup>47</sup>

Republiq combines these estimates with the dataset from step 1 on the function and construction period of the buildings. The result of this step is a dataset containing all buildings owned by municipalities with an estimated value for energy consumption in 2018, 2023 and 2024.

Republiq provided Het PON & Telos with the following data:

- Total electricity consumption (in kWh)
- Total gas consumption (in Nm<sup>3</sup>)
- Floor area (m<sup>2</sup>)

The next step was carried out by Het PON & Telos:

To make the final calculations for both scope 1 natural gas consumption and scope 2 electricity consumption, the total electricity and natural gas consumption was multiplied by the corresponding emission factor from the same year as the data. For scope 1 natural gas consumption, the emission factor natural gas (Nm<sup>3</sup>) was used. For scope 2 electricity consumption, the emission electricity (unknown source) (kWh) was used.

### **Floor area**

The source of the floor area data is the Basic Registration of Addresses and Buildings (BAG). The reference date for the total floor area of buildings owned by municipalities is 1-1-2025. To calculate the financed GHG emissions per financed m<sup>2</sup>, the total attributed GHG emissions in tCO<sub>2</sub>e for the municipalities were divided by the total financed floor area (m<sup>2</sup>) of the municipalities.

### ***Scope 1 fossil fuel for company cars***

Scope 1 emissions also include fossil fuel emissions from company cars. For this calculation, the number of employees working for the total public administration and government services sector and the number of employees working for a general government administration (SBI code 8411: general government administration, which includes municipalities as well as provinces and ministries), both per municipality, were used.

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<sup>46</sup> VIVET (n.d.). [Energieverbruik maatschappelijk vastgoed](#) (Dutch website).

<sup>47</sup> CBS (2025). [Energiebalans: aanbod en verbruik, sector](#) (Dutch website).

The number of company cars used in the entire public administration and government services sector is known (CBS Statline). To calculate the total number of company cars for the municipalities, the number of company cars used by the total public administration and government services sector was multiplied by the percentage of employees working for the municipalities in relation to all employees working for the Dutch public administration and government services sector.

Company cars owned by Dutch municipalities were distributed to each municipality according to its share of municipal employees. This was multiplied by the number of kilometres travelled per company car (all fuel types) and multiplied by the emission factor for passenger transport, car, fuel type unknown, weight class unknown (Table 2-4). The GHG emissions were divided by a factor of 1,000 to obtain the GHG emissions in tonnes for company cars.

After calculating scope 1 and scope 2 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loan to total balance sheet is 25%, 25% of the municipality's scope 1 and 2 GHG emissions are attributed to NWB. The financed GHG emissions per client are added up to result in the total financed GHG emissions per sector.

The financed GHG emissions and relative financed GHG emissions are reported per scope. The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

The final calculated values for scopes 1 and 2 and the total balance sheet have been reallocated to the 2024 municipal division for all calculated years.

### **Avoided emissions**

For municipalities, avoided emissions are unknown. It is unknown whether municipalities generate their own renewable energy and feed it back into the grid.

### **Asset class specific considerations**

The approach for municipalities is in line with the public loan approach in the PCAF methodology.

## Attribution

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

## Absolute vs. relative emissions

For the municipalities, the total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for which a GHG footprint was calculated in this report.

The relative financed emissions in tCO<sub>2</sub>e / m<sup>2</sup> were calculated by dividing the financed GHG emissions by the attributed m<sup>2</sup> of the clients for which a GHG footprint was calculated in this report.

## Limitations

### *Scope 1 natural gas use & scope 2 electricity use*

The key figures are not available for specific functions. Therefore, the actual consumption of a building may differ from the key figures used.

Some municipal buildings have multiple functions, including a school. It is therefore possible that a small number of schools are included in the municipality buildings.

### *Scope 1 fossil fuel for company cars*

No recorded data are available per municipality on company cars, including details such as number of cars, car types and fuel types. The best possible result is achieved by using the current model(s). Many municipalities are actively working to improve the sustainability of their operations. As part of this effort, they are focusing on making their vehicle fleets more sustainable. However, the calculation method used in this project does not reflect this development. As a result, the GHG emissions from company cars are a relatively rough estimate and may differ from the actual situation due to developments in making the local authority fleet more sustainable. In addition to cars, municipalities also have other means of transport

such as scooters and (electric) bicycles. The use of these means of transport is not included in the calculated GHG emissions for company cars.

## Data quality estimate

### Scope 1 natural gas use & scope 2 electricity use

Data quality score 3. Key figures of public real estate are used. The key figures are available for the years 2022 and 2023. For 2024 and 2018, an estimate has been made on the trends in energy consumption as published by CBS.<sup>48</sup>

### Scope 1 fossil fuel for company cars

The GHG emissions calculations are based on average car information. Brand, model, and type are not known, and distance travelled is based on local or regional statistical data. See option 3b in Table 5-16 on page 106 of the report PCAF (2022).<sup>49</sup> Therefore, the data quality score is 5.

## Calculation sheets

The final overview of all the calculations for 2018, 2023 and 2024 can be found in the data files mentioned in the factsheet below.

List of the calculation sheets	Location
250925 energiedata NWB onder elkaar gezet.xlsx	\Werkmap\Gemeenten\c. Voorbewerkte data
250902 bewerking aantal banen sector O gemeente.xlsx	
250902 berekening sbi 8411 zonder provincie 2024.xlsx	
250919 leningportefeuille NWB gemeente 2018.xlsx	
bNWB.tGemeente_Leningportefeuille_Loans.csv	
bCBSstatline.tGemeente_Passiva.csv	\Werkmap\Gemeenten\d. Data voor SQL
bGemeenteBerekeningen.tGemeente_Scope3_versie2025.csv	
bLISA.tGemeente_Banen_sbi8411.csv	
bLISA.tGemeente_Banen_SectorO.csv	
bRepubliq.tNWB_Gemeente_Energieverbruik_versie2025.csv	
252708_NWB_Gemeente_2018_versie2025.ipynb	
250903_NWB_Gemeente_2023_versie2025.ipynb	
250903_NWB_Gemeente_2024_versie2025.ipynb	

<sup>48</sup> CBS (2025). [Energiebalans: aanbod en verbruik, sector](#) (Dutch website).

<sup>49</sup> PCAF (2022). [The Global GHG Accounting and Reporting Standard Part A: Financed Emissions](#). Second edition.

<p>251019 pNWB.tGemeente_2018_Ratio_Lening_P assiva_versie2025.xlsx</p> <p>251019 pNWB.tGemeente_2018_IndividueleKlan ten_versie2025.xlsx</p> <p>251019 pNWB.tGemeente_2018_CO2voetafdruk _Absoluut_Totaal_versie2025.xlsx</p> <p>251019 pNWB.tGemeente_2018_CO2voetafdruk _Relatief_Totaal_versie2025.xlsx</p> <p>250930 pNWB.tGemeente_2023_Ratio_Lening_P assiva_versie2025.xlsx</p> <p>250930 pNWB.tGemeente_2023_IndividueleKlan ten_versie2025.xlsx</p> <p>250930 pNWB.tGemeente_2023_CO2voetafdruk _Absoluut_Totaal_versie2025.xlsx</p> <p>250930 pNWB.tGemeente_2023_CO2voetafdruk _Relatief_Totaal_versie2025.xlsx</p> <p>251008 pNWB.tGemeente_2024_Ratio_Lening_P assiva_versie2025.xlsx</p> <p>251008 pNWB.tGemeente_2024_IndividueleKlan ten_versie2025.xlsx</p> <p>251008 pNWB.tGemeente_2024_CO2voetafdruk _Absoluut_Totaal_versie2025.xlsx</p> <p>251008 pNWB.tGemeente_2024_CO2voetafdruk _Relatief_Totaal_versie2025.xlsx</p>	<p>\Werkmap\Gemeenten\f1. Data uit SQL NWB</p>
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## 6.2.2 Scope 3

### General factsheet scope 3

#### Scopes covered

Scope 3 covers all indirect GHG emissions except for the indirect GHG emissions that are already covered in scope 2. Scope 3 emissions per municipality are not known but can be estimated by using a spend-based method based on the annual spending of municipalities (IV3/COFOG; classification of the function of government).

#### Portfolio covered

Data are collected for all municipalities in the Netherlands. This means that the coverage ratio for this sector is 100%.

#### Data

The data on municipal expenditure (IV3 data) come from the Dutch Central Bureau of Statistics (CBS). The data come directly from the municipalities themselves. Municipalities deliver the data directly to CBS in a uniform, prescribed format. CBS does not check or edit the data.

The OECD has developed the Classification of the Function of Government (COFOG), a system that categorises government expenditure data from the System of National Accounts according to the specific purposes for which funds are allocated. Municipal budgets are divided into 9 main task fields (first level) and 48 tasks (second level).

The tasks indicate the purpose of the expenditure. The following main task fields are included: management and support; safety; traffic, transport and water management; economy; education; sport, culture and recreation; social domain; public health and environment; public housing, spatial planning and urban renewal.

The expenditures are also classified by economic categories. These categories indicate the type of expenditure. The following categories are included: salaries and social charges; taxes; goods and services; transfers; interest and dividends; financial transactions; settlements.

Data about the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 3) were used to link the 17 sectors from the PCAF database to the different task fields and tangible assets of municipalities (see Calculation steps in this factsheet for more information).

The emission factors from the PCAF database need to be corrected for inflation. The emission factor has been adjusted using the inflation index for the Netherlands from the PCAF database.

### **Grid emission factors**

No emission factors have been used from section 2.4.

A database of emission factors that is often used for a spend-based method is the EXIOBASE database. These emission factors are also available in the PCAF database (March 2024) which were derived from EXIOBASE v3.9. For 17 sectors, the PCAF database provides an emission factor based on tCO<sub>2</sub>e per million euro revenue. Emission factors are available per country and region (EU member states). PCAF recommends using the regional emission factors as it is more accurate than country emission factors. In the PCAF database, the emission factors are only available for the year 2019. Emission factors are corrected for inflation from 2019 to 2018, 2023 and 2024 using an inflation factor for the Netherlands.

### **Calculation steps**

For the scope 3 calculation, a selection of relevant task fields per economic subcategory and relevant tangible assets was made. Only those task fields, subeconomic categories and tangible assets relevant for GHG emissions were selected.

The following subeconomic categories were selected:

- Durable goods
- Other goods and services

Two economic subcategories were included in the scope 3 calculations: 3.2 purchases of sustainable goods and services and 3.8 purchases of other goods and services. Within the economic subcategories the following task fields are relevant for the calculation of GHG emissions:

The letter between brackets corresponds to a sector in the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 3). According to the detailed description of the task fields and tangible assets, the most appropriate production sector(s) has/have been linked.

- 2.1 Traffic and transport: this includes the maintenance of roads, squares, cycle paths, bridges and tunnels. Also includes street cleaning. This is related to Construction (F).
- 2.4 Commercial harbours and waterways: this includes work such as dredging, but also maintenance of shorelines and ice control on the water. This is related to Construction (F).

- 2.5 Public transport: this includes mainly a financial contribution to the province for public transport, but also major infrastructure facilities. In the case of large municipalities, this includes own public transport such as trams or metro. This is related to a combination of Construction (F), Transport equipment (D34-35), Transport (I).
- 3.2 Physical business infrastructure: this includes the maintenance of roads in business parks. This includes contributions to activities aimed at creating physical conditions for all forms of business activity, including maintenance of facilities. This is related to Construction (F).
- 5.7 Public green areas and (outdoor) recreation: this item includes the maintenance of natural areas and waterways. It includes the cost of maintaining green areas and playgrounds. This is related to Other services (O).
- 7.2 Sewerage: this item includes the maintenance of sewers, but also the prevention of groundwater problems and the treatment of wastewater. This is related to Other services (O).
- 7.3 Waste: this includes the collection and processing of commercial and household waste. It also includes activities such as waste separation. This is related to Other services (O).
- 7.4 Environmental management: this includes pest control, but also the protection and remediation of soil quality. It also includes activities such as noise control and radiation protection. This is related to Other services (O).
- 8.2 Land development (non-industrial sites): this relates to land for non-industrial sites. It includes the cost of responsibly preparing land for eventual residential development. This is related to Construction (F).

The iv3 data include seven items of tangible assets. Six of these were included in the scope 3 calculation: only the item Land (A121) was not included. This item only covers purchase of (bare) land, without buildings. Therefore, this item was not relevant for this calculation. The other items concern the purchase of buildings (both residential and non-residential), the construction of new buildings, the purchase of machinery, means of transport and public roads. These items are relevant for the calculation of GHG emissions and are therefore included.

The following tangible assets are relevant for the calculation of GHG emissions:

- Housing (A122), Commercial Buildings (A123) and Land, civil engineering works (A124) all relate to Construction (F). They include the purchase of residential properties as well as commercial buildings such as offices and construction work such as the construction of a bridge.
- Transportation equipment (A125) is related to Transport equipment (D34/35). This includes the purchase of, for example, bicycles and (company) cars.

- Machinery, equipment and installations (A126) covers purchases of items such as computers and printers, among other things. This item is related to Electrical & machinery (D29/33).
- The item Others (A129) is related to Other services (O).

After the task fields and tangible assets were linked to an ISIC code, the corresponding emission factor from the PCAF database was selected. The expenditures in the IV3 data for the mentioned task fields per economic subcategory and for the mentioned tangible assets were multiplied by 1,000 to have the expenditures in euro. Then, these expenditures were multiplied with the emission factor corrected for the inflation index for a particular year (2018, 2023 or 2024). For those task fields where multiple sectors are involved, one composite emission factor is created based on an equal distribution of the different sectors. For example, when three sectors are involved, the emission factor used for the calculation consists of one third of the individual emission factor per sector. For each municipality, the calculated tCO<sub>2</sub>e emissions per item were added up to result in tCO<sub>2</sub>e per municipality.

After calculating scope 3 GHG emissions, the GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loans to total balance sheet is 25%, 25% of the social housing association's scope 1 and 2 GHG emissions are attributed to NWB. The financed GHG emissions per client are added up to result in the total financed GHG emissions per sector.

The financed GHG emissions and relative financed emissions are reported per scope. The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

### **Avoided emissions**

Not applicable

### **Asset class specific considerations**

The approach for municipalities is in line with the public loan approach in the PCAF methodology.

### **Attribution**

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

### Limitations

The spend-based method was used to calculate Scope 3 for municipalities. The spend-based method calculates GHG emissions based on an organisation's expenditure. A database with emission factors that are often used for a spend-based method is the EXIOBASE database. These emission factors are also available in the PCAF database. The unit of the emission factor is tCO<sub>2</sub>e/million euro. The emission factors are available per country, but PCAF recommends using the region emission factors as it is more accurate than country emission factors. In the PCAF database, the emission factors are only available for the year 2019. Emission factors are corrected for inflation from 2019 to 2018, 2023 and 2024 using an inflation factor for the Netherlands.

The spend-based method and the use of Dutch-level emission factors from 2019 are far from ideal. Apart from inflation, sustainable choices are often more expensive. As a result, expenditure is higher, and because expenditure is higher, the calculated GHG emissions are also higher under the spend-based method, while emissions are lower.

### Data quality estimate

Data quality score 4. The PCAF database gives a quality score of 4 when emissions are calculated using an emission factor based on tCO<sub>2</sub>e/million euro revenue.

### Calculation sheets

The final overview of all the calculations for 2024 can be found in the data file mentioned in the factsheet below.

List of the calculation sheets	Location
251006 scope 3 gemeente 2024.xlsx	\Werkmap\Gemeenten\f3. Berekening NWB

## 7 Public sector: provinces

### 7.1 Results public sector: provinces

In 2024, the provinces account for a small share of the bank's loan portfolio, representing 0.5% of the total.

#### 7.1.1 Coverage ratio and attribution

It has been possible to provide all provinces in the loan portfolio with a calculated GHG footprint, resulting in a 100% coverage ratio. Between 2023 and 2024, the outstanding loan volume has decreased by 23 million Euro. The total balance sheet of clients with a calculated GHG footprint increased. As a result, the ratio of the loan portfolio to the total balance sheet has slightly decreased compared to last year. This means that the attribution to NWB Bank also decreased compared to last year. For 2018, 2023 and 2024, the loan portfolio, the total balance sheet and the coverage ratio are shown in Table 7-1.

Table 7-1 Loan portfolio, coverage ratio and ratio loan portfolio versus total balance sheet for the provinces in 2018, 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated*
2018	247	0.5	247	100.0	1,576	0.16
2023	340	0.6	340	100.0	3,409	0.10
2024	317	0.5	317	100.0	3,706	0.09

## 7.1.2 Financed GHG emissions

Table 7-2 shows the calculated GHG footprint results for the provinces in 2018, 2023 and 2024.

Table 7-2 Absolute and relative financed GHG emissions for the provinces in 2018, 2023 and 2024

Source of emissions	Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)			Financed GHG emissions (%)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)		
		2018	2023	2024	2018	2023	2024	2018	2023	2024
Natural gas use	1	176	136	90	1.0	1.5	0.9	0.7	0.4	0.3
Fossil fuel use (cars)	1	14	12	11	0.1	0.1	0.1	0.1	0.0	0.0
Electricity use	2	674	417	340	3.9	4.7	3.4	2.7	1.2	1.1
Purchased goods and services	3	16,619	8,249	9,616	95.1	93.6	95.6	67.4	24.2	30.4
<b>Total</b>	<b>1-2-3</b>	<b>17,483</b>	<b>8,813</b>	<b>10,057</b>	<b>100.0*</b>	<b>100.0*</b>	<b>100.0*</b>	<b>70.9</b>	<b>25.9</b>	<b>31.8</b>
<b>Total</b>	<b>1-2</b>	<b>864</b>	<b>564</b>	<b>442</b>	<b>4.9</b>	<b>6.4</b>	<b>4.4</b>	<b>3.5</b>	<b>1.7</b>	<b>1.4</b>

\*The sum in these columns is not always exactly 100% due to rounding per sector

Between 2023 and 2024 the financed GHG emissions decreased for scope 1 and 2 but increased for scope 3. In total, the financed GHG emissions increased by 1,244 tonnes. This increase in financed GHG emissions is mainly due to a decrease in scope 3 (1,366 tonnes). The increase in scope 3 is due to the increase of total expenditure on procurement of goods and services between 2023 and 2024.

The relative financed GHG emissions increased by 5.9 tonnes per million euro. Both the absolute financed GHG emissions and the relative financed GHG emissions increased. The financed GHG emissions for scope 3 increased and influenced both the absolute (>95%) and relative GHG emissions. Because the data quality of scope 3 is poor (score 4), no hard conclusions can be drawn from these figures.

## 7.2 Public sector: provinces approach

The method used to calculate scope 3 for provinces is almost the same as the method to calculate scope 3 for municipalities. For details about this approach see section 6.2.2. For the differences in calculation methodology between province and municipality, see the calculation steps in the general factsheet below.

## General factsheet

### Scopes covered

For provinces, scope 1 natural gas consumption, scope 1 fossil fuel use by company cars, scope 2 electricity consumption and scope 3 purchased goods and services are covered.

Scope 1 emissions include the direct GHG emissions of the organisation. For provinces, these emissions result from the use of natural gas for heating buildings and the use of fossil fuels for cars. The exact figures for these sources are not known for each province, so estimates were made using several calculation steps to obtain the best possible result.

Scope 2 emissions include the indirect GHG emissions from the consumption of purchased electricity, heat or steam. The use of heat and steam per province is not known, so scope 2 only includes the use of purchased electricity. As the exact numbers per province are not known, estimates were made using several calculation steps.

Scope 3 covers all indirect GHG emissions except for the indirect GHG emissions that are already covered in scope 2. Scope 3 emissions per province are not known but can be estimated by using a spend-based method based on the annual spending of provinces (IV3/COFOG; classification of the function of government).

### Portfolio covered

Data are collected for all provinces. This means that the coverage for this sector is 100%.

### Data

For scope 1 natural gas consumption and scope 2 electricity consumption, 2024 data were used. For scope 1 fossil fuel consumption of company cars, the calculation was made with partial use of 2023 data.

The data used in this approach comes from several sources.

For provinces energy data and the litres of fuel consumed or driven kilometres by company cars are not available per province. Therefore, calculations are performed based on several data sources to estimate the GHG emissions due to natural gas use, electricity use, and the use of company cars. Data used for these calculations are summarised here and the used calculations are explained below at the section calculation steps.

Data on the number of employees working for SBI-code 8411 (general government administration, which includes municipalities, provinces and ministries) and data on the number of employees working for the entire public administration and

government services sector comes from Lisa. Lisa serves as the national information system on jobs in the Netherlands and contains a comprehensive database with information on all places where paid work is performed.

Data on the number of employees working for the provincial government organisation come from 'A&O fonds provincies'. 'A&O fonds provincies' is an organisation that provides governments with practical tools, knowledge and subsidies. These data are available at the aggregated level of the provinces.

The source of the data on the supply of energy to the public administration and government services sector is Statistics Netherlands (CBS). The data covers the supply of electricity and natural gas to enterprises and other public buildings. The data are based on the energy network connection register and are therefore reliable. Data are on sector and region level.

Data on the number of passenger cars owned by enterprises per sector come from the Dutch Central Bureau of Statistics (CBS). The data originate from the vehicle register (RDW), which ensures their reliability and accuracy.

Data on the number of kilometres travelled by car per year comes from the Dutch Central Bureau of Statistics (CBS) and covers the average number of kilometres travelled per year by a passenger car registered in the Netherlands. The original data comes from the RDW's Online Kilometre Registration (OKR), which ensures its reliability.

Data on provincial expenditure (IV3 data) come from the Dutch Central Bureau of Statistics (CBS). The data come directly from the provinces themselves. Provinces deliver the data directly to CBS in a uniform, prescribed format. CBS does not check or edit the data.

The OECD has developed the Classification of the Function of Government (COFOG), a system that categorises government expenditure data from the System of National Accounts according to the specific purposes for which funds are allocated. Provincial budgets expenditures divided into task fields.

The tasks indicate the purpose of the expenditure. The following main task fields are included: general resources, governance, traffic and transport, water, environment, nature, regional economics, culture and society, space.

The expenditures are also classified by economic categories. These categories indicate the type of expenditure. The following categories are included: salaries and social charges; taxes; goods and services; transfers; interest and dividends; financial transactions; settlements.

Data about the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 3) were used to link the 17 sectors from the PCAF database to the different task fields and tangible assets of provinces.

The emission factor has been adjusted using the inflation index for the Netherlands from the PCAF database, in order to express it in real terms.

### **Grid emission factors**

Section 2.4 contains more information on emission factors.

The following emission factors from Appendix A have been used:

- Natural gas
- Electricity (unknown source)
- Passenger transport, Car, Fuel type unknown, Weight class unknown.

For scope 3 no emission factors have been used from section 2.4.

A database of emission factors that is often used for a spend-based method is the EXIOBASE database. These emission factors are also available in the PCAF database (March 2024) which were derived from EXIOBASE v3.9. For 17 sectors, the PCAF database provides an emission factor based on tCO<sub>2</sub>e per million euro revenue. Emission factors are available per country and region (EU member states). PCAF recommends using the regional emission factors as it is more accurate than country emission factors. In the PCAF database, the emission factors are only available for the year 2019. Emission factors are corrected for inflation from 2019 to 2018, 2023 and 2024 using an inflation factor for the Netherlands.

### **Calculation steps**

#### *Scope 1 natural gas and scope 2 electricity*

For the public administration and government services sector, the supply of natural gas and electricity is known (CBS) at the aggregated level of provinces and includes both provinces and other governmental authorities, such as municipalities.

To calculate scopes 1 and 2 for the provinces, several calculation steps were taken. The number of employees working for the total public administration and government services sector is known at the level of the province (Lisa), as well as the number of employees working for the province as an organisation (A&O fonds Provincies).

The supply of natural gas and electricity to the public administration and government services sector is known for each province (CBS). The percentage of the number of employees working for each provincial organisation (A&O fonds Provincies) relative to the number of employees working for the total public administration and government services sector in each province (Lisa) was

multiplied by the supply of natural gas and electricity to the public administration and government services sector (CBS).

This results in the supply of natural gas and electricity to the province as an organisation. The amount of natural gas was multiplied by the emission factor for natural gas (Appendix A) and the amount of electricity was multiplied by the emission factor for electricity (unknown source; Appendix A). The amount of GHG emissions was divided by a factor of 1,000 to obtain tonnes of GHG emissions for scope 1 (natural gas) and scope 2 (electricity).

### *Scope 1 fossil fuel for company cars*

Scope 1 emissions also include fossil fuel emissions from company cars. For this calculation, the number of employees working for the total public administration and government services sector at the province level (Lisa) and the number of employees working for the provincial organisation (A&O Fonds Provincies) were used.

The number of company cars used in the total public administration and government services sector is known (CBS Statline). To calculate the total number of company cars for the provinces, the number of company cars used by the total public administration and government services sector was multiplied by the percentage of employees working at provinces relative to all employees working for the Dutch public administration and government services.

To obtain the number of company cars per province the total number of company cars for Dutch provinces was multiplied by the percentage of employees working for the province in relation to all employees working for Dutch provinces. This was multiplied by the number of kilometres travelled per company car (all fuel types) and multiplied by the emission factor for passenger transport, car, fuel type unknown, weight class unknown (Appendix A). The GHG emissions were divided by a factor of 1,000 to obtain the GHG emissions in tonnes for company cars.

After calculating scopes 1 and 2 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loan to total balance sheet is 25%, 25% of the provinces' scope 1 and 2 GHG emissions are attributed to NWB. The financed GHG emissions per client are added up to result in the total financed GHG emissions per sector.

The financed GHG emissions and relative financed GHG emissions are reported per scope. The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

Scope 3 are all indirect GHG emissions except for the indirect GHG emissions that are already covered in scope 2. With a few exceptions, the calculation method for scope 3 provinces is the same as for scope 3 municipalities.

For the scope 3 calculation, a selection of relevant task fields per economic subcategory and relevant tangible assets was made. Only those task fields, subeconomic categories and tangible assets relevant for GHG emissions were selected. For provinces the same economic subcategories and tangible assets were included in the calculation as for municipalities. However, the task fields are different than those of the municipalities.

Within the economic subcategories the following task fields are relevant for the calculation of GHG emissions:

The letter between brackets corresponds to a sector in the International Standard Industrial Classification of All Economic Activities (ISIC Rev. 3). According to the detailed description of the task fields and tangible assets, the most appropriate production sector(s) has/have been linked.

- 2.1 Land roads: this includes the management and maintenance of land roads. Other activities under this heading include traffic surveys, ice control, road marking, and installation of traffic control devices. This is related to Construction (F).
- 2.2 Waterways: this covers the construction, management and maintenance of waterways. It includes items such as dredging, shoreline maintenance, construction and replacement of waterway structures. This is related to Construction (F).
- 2.3 Public Transportation: this includes all activities related to public transport, such as trains, trams, metros, buses, boats, and ferries. This is related to a combination of Construction (F), Transport equipment (D34-35), and Transport (I).
- 4.1 Soil Protection: Includes costs related to soil protection measures and soil decontamination. This is related to Other community, social and personal service activities (O).
- 5.2 Management of natural areas: this item includes activities related to nature management and the protection of nature and landscapes. This is related to Other community, social and personal service activities (O).
- 5.3 Management of flora and fauna: this item includes control of invasive exotic species and management of goose damage. This is related to Other community, social and personal service activities (O).

For further details see the general factsheet of scope 3 municipalities.

## Avoided emissions

The CBS table on supply of natural gas and electricity through public grid, states the following:

This table gives figures for electricity and gas supplied to enterprises and other commercial buildings. This includes supply via the public grid, including supply from the public grid to the company's own grid. Electricity produced by enterprises for their own consumption is therefore not included in these figures.

If a province invests in renewable electricity, it will reduce the amount of electricity it consumes from the grid. Indirectly, therefore, investments in renewable electricity should be reflected in a reduction of scope 2 electricity in this report.

## Asset class specific considerations

The approach for provinces is in line with the public loan approach in the PCAF methodology.

## Attribution

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

## Absolute vs. relative emissions

For the provinces, the total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for which a GHG footprint was calculated in this report.

## Limitations

### *Scope 1 natural gas use and scope 2 electricity use*

The actual natural gas - and electricity consumption by provinces as an organisation are not known. It is therefore calculated according to the estimated number of employees working for the province and the total number of employees working for the whole public administration and government services sector per province.

### *Scope 1 fossil fuel by company cars*

There is no recorded data per province on company cars, including details such as number of cars, car types and fuel types. The best possible result is achieved by using the current model(s). Many provinces are actively working to improve the sustainability of their operations. As part of this effort, they are focusing on making their vehicle fleets more sustainable. The calculation method used in this project does not reflect this development. As a result, the GHG emissions from company cars are a relatively rough estimate and may differ from the actual situation due to developments in making the local authority fleet more sustainable. In addition to cars, provinces also have other means of transport such as scooters and (electric) bicycles. The use of these means of transport is not included in the calculated GHG emissions for company cars.

### *Scope 3*

For scope 3 limitations see limitations scope 3 municipalities.

## **Data quality estimate**

### *Scope 1 natural gas and scope 2 electricity*

Data quality score 4. The GHG emissions are calculated based on the energy supply to the public administration and government services sector at the aggregated level of provinces. This includes not only the energy supply to the provinces, but also to other government authorities such as municipalities. Therefore, the data are used based on region and the data quality score is 4.

### *Scope 1 company cars*

Data quality score 5. The GHG emissions are calculated based on average car information. Brand, model, and type are not known and distance travelled is based on local or regional data. See option 3b in Table 5-16 on page 106 of the PCAF report (2022)<sup>50</sup>. Therefore, the data quality score is 5.

### *Scope 3*

Data quality score 4. The PCAF database gives a quality score of 4 when emissions are calculated using an emission factor based on tCO<sub>2</sub>e/million euro revenue.

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<sup>50</sup> PCAF (2022). [The Global GHG Accounting and Reporting Standard Part A: Financed Emissions](#). Second edition.

## Calculation sheets

The final overview of all the calculations for 2024 can be found in the data files mentioned in the factsheet below.

List of the calculation sheets	Location
251101_bewerking passiva provincie 2018_2021_2022_2024.xlsx 251105_BewerkingAardgasElektra.xlsx	\Werkmap\Provincies\c. Voorbewerkte data
bAenO.tProvincie_BanenbijProvincie.csv bNWB.tProvincie_Leningportefeuille.csv bCBSstatline.tAardgasElektraProvincie.csv bLISA.tProvincie_Banen_SectorO.csv bProvincieBerekeningen.tProvincie_Scope3_versie2025.csv bCBSstatline.tProvincie_Passiva.csv	\Werkmap\Provincies\d. Data voor SQL
251105_NWB_Provincie_2024_versie2025.ipynb	\Werkmap\Provincies\e. SQL notebooks
251006 provincie berekening scope 3 2024.xlsx	\Werkmap\Provincies\f4. Berekening NWB
251112_pNWB.tProvincie_2024_CO2voetafdruk_Absoluut_Totaal_versie2025.xlsx 251112_pNWB.tProvincie_2024_CO2voetafdruk_Relatief_Totaal_versie2025.xlsx 251112_pNWB.tProvincie_2024_IndividueleKlanten_versie2025.xlsx 251112_pNWB.tProvincie_2024_Ratio_Lening_Passiva_versie2025.xlsx	\Werkmap\Provincies\f2. Data uit SQL NWB

## 8 Healthcare sector

### 8.1 Results of the healthcare sector

In 2024, the healthcare sector accounts for a small share of the bank's loan portfolio, representing 3.3% of the total.

#### 8.1.1 Coverage ratio and attribution

The GHG footprint was calculated for 99.4% of the healthcare loan portfolio in 2024. Between 2023 and 2024, the outstanding loan volume increased by 60 million euro. The loan portfolio of clients with a calculated GHG footprint increased by 61 million euro. The coverage ratio remained similar. The total balance sheet of clients with a calculated GHG footprint also increased. As a result, the ratio of the loan portfolio to the total balance sheet has not changed compared to last year. This means that the attribution to NWB Bank also has not changed. For 2018, 2023 and 2024, the loan portfolio, the total balance sheet and the coverage ratio are shown in Table 8-1.

Table 8-1 Loan portfolio, coverage ratio and ratio loan portfolio versus total balance sheet for the healthcare sector in 2018, 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated
2018	2,119	4.4	1,895	89.4	28,820	0.07
2023	1,925	3.4	1,912	99.3	32,731	0.06
2024	1,985	3.3	1,973	99.4	34,595	0.06

^ In 2023 and 2024, the total balance sheets for 1 and 3 healthcare institutions, respectively, were unavailable. For these institutions, a loan-to-balance-sheet ratio was calculated using the average loan-to-balance-sheet ratio of the other institutions. An average ratio of 0.07 was applied for 2023, and 0.06 for 2024.

## 8.1.2 Financed GHG emissions

Table 8-2 shows the calculated GHG footprint results for the healthcare sector in 2018, 2023 and 2024. Due to different sets of clients and changes in the methodology in 2024, the data for the different years are not directly comparable (see section 8.2.1).

To enable comparison across years, the natural gas and electricity consumption for the 2018 and 2023 loan portfolios have been recalculated using the current methodology (see section 8.2.1). When recalculating natural gas consumption and electricity consumption, results show higher natural gas consumption and lower electricity consumption in 2023 compared to 2024 (data not shown).

Table 8-2 shows the calculated GHG footprint results for the healthcare sector in 2018, 2023 and 2024. The emission factors for natural gas and electricity (unknown source) decreased. The coverage ratio remained 99.4%. These changes affect the financed GHG emissions.

**Table 8-2 Absolute and relative financed GHG emissions for the healthcare sector in 2018, 2023 and 2024.**

Source of emissions	Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)			Financed GHG emissions (%)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)		
		2018	2023	2024	2018	2023	2024	2018	2023	2024
Natural gas use	1	49,826	37,548	15,109	53.6	60.1	35.0	26.3	19.6	7.7
Other	1	-	-	192	-	-	0.4	-	-	0.1
Electricity use	2	25,320	14,642	16,834	27.2	23.4	39.0	13.4	7.7	8.5
Other	2	-	-	193	-	-	0.4	-	-	0.1
Commuting	3	17,818	10,329	-#	19.2	16.5	-#	9.4	5.4	-#
Travel and transport	3	-	-	10,768	-	-	24.9	-	-	5.5
Other	3	-	-	117	-	-	0.3	-	-	0.1
<b>Total</b>	<b>1-2-3</b>	<b>92,963</b>	<b>62,519</b>	<b>43,212</b>	<b>100.0*</b>	<b>100.0*</b>	<b>100.0*</b>	<b>49.1</b>	<b>32.7</b>	<b>21.9</b>
<b>Total</b>	<b>1-2</b>	<b>75,145</b>	<b>52,190</b>	<b>32,327</b>	<b>80.8</b>	<b>83.5</b>	<b>74.8</b>	<b>39.7</b>	<b>27.3</b>	<b>16.4</b>

- means no data are available.

\*The sum in these columns is not always exactly 100% due to rounding per sector

# Due to the adjustment in methodology, from 2024 onwards scope 3 will contain more than just commuting (see section 8.2). Therefore, commuting and other forms of travel and transportation will be covered in 'Travel and transport'.

In 2024, the methodology to calculate scope 1, 2 and 3 emissions was adjusted (see section 8.2.1). Therefore, it is not possible to compare the results of 2018 and 2023 with 2024, as shown in Table 8-2 and 8.3. The effect of the change in methodology for scope 1 natural gas and scope 2 electricity is shown in Table 8-4 in section 8.2.1

and should be taken into account while interpreting the results in this chapter. For scope 3, it was not possible to recalculate the 2018 and 2023 data using the current methodology. Therefore, the 2024 financed scope 3 emissions are not comparable to those of previous years.

Accounting for the methodological change reveals important nuances in the emission trends. For scope 1 natural gas, financed GHG emissions have indeed decreased from 2018 to 2023, though less steeply than Table 8-2 suggests. For scope 2 electricity, the current methodology yields higher financed GHG emissions for both 2018 and 2023 (see Table 8-4), which means that the increase in financed electricity consumption stated in Table 8-2 is most probably a decrease.

Due to an increase in loans covered by a calculated GHG footprint and a decrease in financed GHG emissions, relative financed GHG emissions appear lower in 2024 compared to 2023. However, taking into account the effect of the change in methodology, the actual decrease in relative financed GHG emissions is probably lower than suggested in Table 8-3.

**Table 8-3 Financed GHG emissions per financed floor area (m<sup>2</sup>) for the healthcare sector in 2018, 2023 and 2024**

Year	Financed GHG emissions real estate related (kgCO <sub>2</sub> e) / financed m <sup>2</sup>
2018	88.5
2023	72.5
2024	44.4

To be able to compare energy consumption regardless of differences in client sets and surface, financed GHG emissions are expressed in relation to financed surface of buildings. This number is much lower in 2024 (44.4 kgCO<sub>2</sub>e/m<sup>2</sup>) than it was in 2023 (72.5 kgCO<sub>2</sub>e/m<sup>2</sup>), which could be the result of the change in methodology. The total floor area owned by healthcare institutions is higher in 2024 than in 2023. The floor area in m<sup>2</sup> was gathered from the healthcare institutions themselves for 19.5% of the institutions. For the other 79.5% for which scope 1 and 2 were calculated, a new inventory of property data was carried out by the 'Kadaster'.<sup>51</sup> The increase in total floor area combined with the lower energy consumption data through the adjustment in methodology in 2024, have led to the difference in financed GHG emissions in relation to the financed floor area.

Financed emissions per financed m<sup>2</sup> are relatively high for healthcare institutions compared to other sectors. Many healthcare institutions operate 24 hours a day, resulting in higher energy consumption. In addition, the intensive use of medical

<sup>51</sup> Kadaster registers of all real estate (land and buildings) in the Netherlands, showing who has what rights.

equipment and devices, which require substantial energy, further contributes to their elevated emissions. There is certainly a focus on reducing GHG emissions from healthcare institutions. This is also an important part of Green Deal Healthcare 3.0.

## 8.2 Healthcare sector approach

### 8.2.1 Scopes 1, 2 and 3

#### Adjustment in methodology

This year, efforts in the healthcare sector have focused primarily on improving data quality by making use of the publicly available Environmental Barometers<sup>52</sup> from as many healthcare institutions as possible. This data comes directly from the institutions themselves and is therefore assigned a data quality score of 2. Since the Environmental Barometer is not available for all healthcare institutions, a combination of methods has been used this year, with the aim of gradually increasing the use of publicly available Environmental Barometers in the coming years. It was not possible to apply the same method for all scopes of 2018 and 2023. Therefore, the 2024 CO<sub>2</sub>e footprints cannot be directly compared with those of previous years. This should be considered when interpreting the results in section 8.1.2.

The differences between the results of the new and previous methodology are shown in Table 8-4. Only scope 1 natural gas and scope 2 electricity were recalculated for the same set of healthcare institutions with GHG emissions of the loan portfolios of 2018 and 2023, using the current methodology combined with national trends of energy consumption. This way, the effect of the change in methodology can be identified. For scope 1 natural gas, the current methodology would have resulted in lower GHG emissions in 2023 and 2018. Scope 2 electricity GHG emissions would have been higher in 2023 and 2018 using the current methodology.

Last year, Republiq estimated energy consumption using key figures for natural gas and electricity consumption. These key figures were based on actual electricity and natural gas usage data from 2018 and 2020, with estimates for 2021, 2022, and 2023 derived from energy consumption trends published by CBS. To obtain actual energy consumption data for 2020, Republiq gathered information from grid operators using clusters of healthcare institutions' properties, taking floor area classes into account. The extrapolation of energy consumption based on CBS trends may have resulted in an overestimation of natural gas consumption for the

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<sup>52</sup> Milieubarometer (n.d.). [Openbare footprints](#) (Dutch website).

year 2023. Additionally, changes in how healthcare institutions were categorized between 2023 and 2024 may have affected consumption figures per square meter. The 2023 key figures were based on ownership and floor area classes, whereas the 2024 key figures were based on type of healthcare institution (such as hospitals, mental healthcare facilities, etc.). However, it is not possible to determine with certainty what caused the overestimation of gas consumption and the slight underestimation of electricity consumption in the GHG emissions calculations.

**Table 8-4 Effect of change in methodology on the GHG emissions in tCO<sub>2</sub>e**

Source of emissions	Scopes	New methodology	Previous methodology	Difference (%) <sup>*</sup>	New methodology	Previous methodology	Difference (%) <sup>*</sup>
		2023	2023	2023	2018	2018	2018
Natural gas	1	17,898	37,548	-52.1	24,369 <sup>#</sup>	49,826	-51.1
Electricity	2	17,625	14,642	20.4	33,389 <sup>#</sup>	25,320	31.9

<sup>\*</sup>The difference is calculated with the following formula: (New-Previous)/Previous\*100

<sup>#</sup>For 6 healthcare institutions it was not possible to recalculate the scope 1 and 2 emissions for 2018. The coverage rate compared to the currently used 2018 loan portfolio with GHG emissions is 99.7%.

This year, three methods were used to calculate Scopes 1 and 2 emissions for healthcare institutions:

1. For the majority of healthcare institutions (18.5%), key figures per square metre from the Environmental Barometer were applied as a baseline to calculate natural gas and electricity consumption, based on five different types of healthcare institutions (care for the disabled, mental healthcare, nursing care, general practitioners and hospitals). These key figures were adjusted using institution-specific data that were received from public Environmental Barometers. This year, the key figures used by Republiq to calculate natural gas and electricity consumption are taken from Environmental Barometer<sup>53</sup>, which was not the case in previous years.
2. For 79.5%, scope 1 and 2 data from the publicly accessible Environmental Barometers were used<sup>54</sup>, and for these institutions, floor area data were obtained via Stimular, following written consent from these institutions.
3. For a few healthcare institutions (1% — mainly hospitals) that do have an Environmental Barometer but not publicly accessible, data on natural gas, electricity consumption, and heat consumption were obtained via Stimular.

Two methods were used to calculate scope 3 emissions for healthcare institutions:

<sup>53</sup> Milieubarometer (n.d.). [Branche gemiddeldes van de zorg](#) (Dutch website).

<sup>54</sup> Milieubarometer (n.d.). [Openbare footprints](#) (Dutch website).

1. For most healthcare institutions (35.5%), commuting and business travel were calculated based on key figures in kilometres per FTE from Environmental Barometer<sup>55</sup>, using five different types of healthcare institutions (care for the disabled, mental healthcare, nursing care, general practitioners, and hospitals). Unfortunately, no key figures were available for business travel of hospitals; therefore, this sector only includes GHG emissions from commuting within Scope 3.
2. For (23.5%), scope 3 data from the publicly available Environmental Barometers were used.<sup>56</sup> All categories were included except for waste and raw materials, visitor kilometres and feed-in electricity as these were only covered in a few Environmental Barometers. Self-generated electricity (for example from solar panels) has not been included, as it is unclear whether the institutions consume all of the generated electricity themselves or feed some of it back into the grid. For healthcare institutions with a public environmental barometer, travel by vehicle (commuting, business travel, passenger cars, delivery vans, freight transport etc.) is included under Scope 3 because the institutions did not make a clear distinction between vehicles owned or leased (Scope 1) and public transport or private cars (Scope 3).

## General factsheet

### Scopes covered

The healthcare approach covers scopes 1, 2, and part of scope 3. Scope 1 emissions are direct GHG emissions resulting from the consumption of natural gas for heating buildings or other on-site purposes. For healthcare institutions with a publicly available Environmental Barometer, emissions from machinery, diesel used for heating, refrigerants, and other specific sources were also included in scope 1. However, not all healthcare institutions report these additional emissions under scope 1.

Scope 2 emissions represent indirect GHG emissions associated with the consumption of purchased electricity, heat, or steam. Data on heat and steam consumption are only available for healthcare institutions that have a publicly accessible Environmental Barometer, and therefore not for all institutions.

Scope 3 emissions in the current healthcare approach include estimated emissions from commuting and business travel when no Environmental Barometer, data were available. In cases where healthcare institutions did have an Environmental Barometer, scope 3 emissions could also include emissions from drinking water,

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<sup>55</sup> Milieubarometer (n.d.). [Branche gemiddeldes van de zorg](#) (Dutch website).

<sup>56</sup> Milieubarometer (n.d.). [Openbare footprints](#) (Dutch website).

wastewater, commuting, business travel, passenger transport, and freight transport. Again, not all healthcare institutions report the same emissions under scope 3.

### **Portfolio covered**

The portfolio coverage ratio for this sector is 99.4%.

Of the loans with a calculated GHG footprint, scope 3 is part of the calculated GHG footprint for 80.9% in 2024.

### **Data**

Data for scopes 1, 2 and 3 are coming from publicly available Environmental Barometers reported by the healthcare institutions themselves, or from key figures for the sector reported by Stimular on the website of the Environmental Barometer.<sup>57</sup> from the Environmental Barometer. These key figures were adjusted using institution-specific data that were received from public Environmental Barometers.

Data on the total balance sheet and fte per healthcare institution per year come from CIBG; Ministerie van Volksgezondheid, Welzijn en Sport.

### **Grid emission factors**

Section 2.4 contains more information on emission factors. The following emission factors from Appendix A have been used:

- Natural gas
- Electricity (unknown source)
- Electricity (Wind Power/Hydropower/Solar Energy/Biomass)
- Electricity (green)
- Electricity (grey)
- Electricity (average heating networks)
- Public Transport in general (Bus/Tram/Metro average)
- Public transport by bus (type unknown)
- Train (unknown type)
- Minibus, Diesel.
- Car, unknown fuel & weight
- Car, Electric
- Car, Petrol hybrid.
- Car, Petrol, weight class middle.
- Car, Diesel, weight class middle.
- Car, LPG, weight class middle.
- Motor, Petrol.

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<sup>57</sup> Milieubarometer (n.d.). [Branche gemiddeldes van de zorg](#) (Dutch website).

- Moped, average.
- Electric bikes/moped/scooter/motor bikes
- Refrigerants (R407c, R404a, R507, R410a, R449a, R448a, R744, R134a, R32)
- Nitrous oxide
- Sulphur Hexafluoride
- Diesel (B7) (NL)
- Petrol (E10) (NL)
- Propane
- Bio-diesel (HVO)

For some emission types, the grid emission factors from the Environmental Barometer were used, as these emission types were not available at [CO2emissiefactoren.nl](https://www.co2emissiefactoren.nl).

## Calculation steps

### Scopes 1 & 2

Scope 1 emissions are the direct GHG emissions of organisations. For healthcare institutions, these emissions result from the use of natural gas to heat buildings or to disinfect medical instruments. Scope 2 emissions include the indirect GHG emissions from the generation of purchased or acquired electricity, steam, heating or cooling consumed by the healthcare institution.

This year, three methods were used to calculate Scopes 1 and 2 emissions for healthcare institutions:

1. For the majority of healthcare institutions (79.5%), key figures per square metre from the Environmental Barometer were applied to calculate natural gas and electricity consumption, based on five different types of healthcare institutions (care for the disabled, mental healthcare, nursing care, general practitioners and hospitals). Republiq performed these calculations and carried out the following steps:
  - a. Inventory of buildings owned by healthcare institutions. BNG provided an overview of the healthcare institutions in its loan portfolio. For these institutions, Republiq has inventoried the properties of the healthcare institutions via Kadaster. The source of the floor area data is the Basic Register of Addresses and Buildings (BAG). The reference date for the total floor area per healthcare institution is 1-1-2025.
  - b. Estimate energy consumption data. Where healthcare institutions provided actual energy consumption data, these primary data were directly used in the calculations. For institutions where no primary consumption data were available, Republiq estimated the energy consumption using key figures from the Environmental Barometer for natural gas and electricity consumption. These key figures from the Environmental Barometer were further refined and adjusted based on actual consumption data received from other healthcare institutions from the public Environmental Barometers. For each healthcare institution Republiq summarised the following measures:
    - Total electricity consumption (in kWh)
    - Total gas consumption (in Nm<sup>3</sup>)
    - Floor area (m<sup>2</sup>)

2. For (18.5%), scope 1 and 2 data from the publicly accessible Environmental Barometers were used, and floor area data were obtained via Stimular, following written consent from these institutions.

Scopes 1 and 2 emissions for healthcare institutions with a public Environmental Barometers can include, where available, the following items:

- Natural gas
- Electricity
- Heat
- Emissions such as refrigerants, isoflurane, sevoflurane and nitrous oxide

Business travel is included under Scope 3 because the institutions did not make a clear distinction between vehicles owned or leased (Scope 1) and public transport or private cars (Scope 3).

3. For a few healthcare institutions (1% — mainly hospitals) that do have an Environmental Barometer but not publicly accessible, data on natural gas, electricity consumption, and heat consumption were obtained via Stimular.

The total energy consumption per healthcare institution was converted into kg GHG emissions using the correct emission factor from Appendix A. These GHG emissions in kg were divided by 1,000 to obtain GHG emissions in tonnes.

### *Scope 3*

Scope 3 should cover all other indirect emissions (not included in Scope 2). In this report, scope 3 emissions contain travel and transport. This year, two methods were used to calculate Scope 3 emissions for healthcare institutions:

1. For the majority of healthcare institutions (35.5%), commuting and business travel were calculated using key figures in kilometres per Full Time Equivalent (FTE) from the Environmental Barometer<sup>58</sup>, based on five types of healthcare institutions (care for the disabled, mental healthcare, nursing care, general practitioners and hospitals). Unfortunately, no key figures were available for business travel for hospitals; therefore, this sector only includes GHG emissions from commuting within Scope 3.

The key figures in kilometres per FTE were multiplied by the institution's FTE to obtain total distances, which were then multiplied by the appropriate emission factor (car, unknown fuel type and unknown weight class) to calculate the GHG emissions. Data on FTE employees were sourced from the Ministry of Health, Welfare and Sport for 2024. If the number of FTE was missing in this database, the FTE from the clients in the

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<sup>58</sup> Milieubarometer (n.d.). [Branche gemiddeldes van de zorg](#) (Dutch website).

top 20 of highest loans was obtained from annual reports. Not all missing FTE figures have been filled in.

2. For (23.5%), scope 3 data from the publicly available Environmental Barometers were used.<sup>59</sup> Scope 3 for healthcare institutions with a public Environmental Barometer includes, where available, the following items:
  - Purchased drinking water
  - Commuting
  - Business travel
  - Freight transport
  - Passenger transport
  - Wastewater

The following items were not included as these were only covered in a few Environmental Barometers:

- Waste and raw materials
- Visitor kilometres
- Feed-in electricity

Self-generated electricity (for example from solar panels) has not been included, as it is unclear whether the institutions consume all of the generated electricity themselves or feed some of it back into the grid.

The categories were multiplied by the appropriate emission factor to calculate the GHG emissions. The used emission factors are mentioned at the section grid emission factors. For healthcare institutions with a public environmental barometer, travel by vehicle (commuting, business travel, passenger cars, delivery vans, etc.) is included under Scope 3 because the institutions did not make a clear distinction between vehicles owned or leased (Scope 1) and public transport or private cars (Scope 3).

The kilograms of GHG emissions for each category of scope 3 were added up to obtain the total scope 3 emissions. These GHG emissions in kg were divided by 1,000 to obtain GHG emissions in tonnes.

### *Overall*

After calculating the scope 1, 2 and 3 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet per client. For example, if the ratio of outstanding loans to total balance sheet is 25%, 25% of the healthcare institution's scope 1, 2 and 3 GHG emissions are attributed to NWB. The financed GHG emissions per client are added up to obtain the total financed GHG emissions per sector.

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<sup>59</sup> Milieubarometer (n.d.). [Openbare footprints](#) (Dutch website).

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for which a GHG footprint was calculated in this report.

To calculate the GHG emissions per m<sup>2</sup> the total financed GHG emissions in kgCO<sub>2</sub>e for the healthcare institutions were divided by the total financed floor area (m<sup>2</sup>) of the healthcare institutions included in the calculated GHG footprint. The total financed floor area was calculated by multiplying the total floor area by the ratio of outstanding loans to total balance sheet.

For the calculation of the coverage ratio, only those healthcare institutions were considered for which it was possible to calculate at least scopes 1 and 2. For some healthcare institutions, scope 3 could not be calculated because FTE data was missing.

### **Avoided emissions**

The avoided emissions for the healthcare sector are not known and therefore not reported in this report.

### **Asset class specific considerations**

For the calculations based on energy consumption data, the approach for the healthcare sector is in line with the 'Commercial real estate' approach in the PCAF methodology.

### **Attribution**

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\textit{Outstanding loan volume}}{\textit{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

### **Absolute vs. relative emissions**

The financed GHG emissions and relative financed emissions are reported per scope.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

The relative financed emissions in tCO<sub>2</sub>e / m<sup>2</sup> were calculated by dividing the financed GHG emissions by the attributed m<sup>2</sup> of the clients for which a GHG footprint was calculated in this report.

### **Limitations**

For 1.5% of the healthcare institutions data on the total balance sheet were not available. For these institutions, the total balance sheet was calculated based on the average ratio outstanding loan volume / total balance sheet. However, this may have been over- or underestimated.

### **Scopes 1 & 2**

For healthcare institutions where the actual natural gas and electricity consumption for 2024 is not known, energy consumption has been estimated based on key figures. This approach is less accurate than using actual consumption data.

The energy consumption data obtained from Republiq only relates to buildings owned by healthcare institutions. Buildings rented by the institutions fall outside the scope. However, if energy consumption data for rented buildings is available, the associated GHG emissions should be included under scope 3.

Ideally, GHG emissions from other sources within the primary processes of healthcare institutions should also be taken into account. Examples include GHG emissions from ambulances and trauma helicopters. Unfortunately, for the majority of healthcare institutions this information is not yet available. For some institutions, however, data from the Environmental Barometer was used for the CO<sub>2</sub>e footprint calculation, which for some institutions also included GHG emissions from sources beyond natural gas and electricity consumption.

### **Scope 3**

Scope 3 should cover all other indirect emissions (not included in Scope 2). For healthcare institutions with a publicly available Environmental Barometer, different emission types were reported. Some healthcare institutions only reported commuting, others reported multiple other emission types. Therefore, the scope of scope 3 is different for each healthcare institution. Furthermore, healthcare institutions did not make a clear distinction between vehicles owned or leased (Scope 1) and public transport or private cars (Scope 3), which is why business travel was included under scope 3. Therefore, scope 1 is underestimated and scope 3 overestimated.

For healthcare institutions without an Environmental Barometer, there are other limitations. The number of employees (in FTE) has a significant impact on the results. From 2022, FTE data from fewer healthcare institutions are registered in the

database of the Ministry of Health, Welfare and Sport. As a result, FTE data from many healthcare institutions were missing for 2024. To calculate a scope 3 GHG footprint for 2024, the FTE of 20 healthcare institutions with a relatively large loan at NWB were looked up in the annual report of the healthcare institution. However, a significant number of healthcare institutions have no available FTE data. For this method, key figures in kilometres per FTE per type of healthcare institution were used. Unfortunately, no key figures were available for business travel for hospitals; therefore, this sector only includes GHG emissions from commuting within Scope 3. In addition, some healthcare institutions could not be categorized into one of the five types of healthcare institutions (care for the disabled, mental healthcare, nursing care, general practitioners and hospitals). For these institutions, scope 3 was omitted.

To summarize: When FTE data were unavailable or a healthcare institution could not be categorized into one of the five healthcare types, only scopes 1 and 2 emissions were calculated, with scope 3 omitted. This results in an underestimation of the total scope 3 emissions.

## **Data quality estimate**

### *Scopes 1 & 2*

Data quality score is 2 and 3.

For 25.9% of outstanding loans to this sector data quality score is 2. Primary data in the Environment Barometer<sup>60</sup> comes from the institutions themselves and therefore data quality score is 2.

For 73.5% of outstanding loans to this sector data quality score is 3. For these healthcare institutions an estimation for natural gas and electricity consumption was made based on key figures of the Environmental Barometer.<sup>61</sup> Energy consumption data are based on averaged data that is peer/(sub)-sector-specific, therefore data quality score is 3.

### *Scope 3*

Data quality score is 2 and 3.

For 33.3% of the outstanding loans of healthcare institutions the data quality score was 2, due to the use of the Environmental Barometer. In these cases, the data used to calculate Scope 3 CO<sub>2</sub>e emissions is provided directly by the institutions themselves.

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<sup>60</sup> Milieubarometer (n.d.). [Openbare footprints](#) (Dutch website).

<sup>61</sup> Milieubarometer (n.d.). [Branche gemiddeldes van de zorg](#) (Dutch website).

For 47.1% of the outstanding loans, part of the Scope 3 CO<sub>2</sub>e emissions has been estimated using sector-specific key figures for commuting and business travel, combined with the institutions' FTE figures. For these institutions, the data quality score is 3, as sector-based key figures have been applied.

For the remaining part of the loan portfolio, scope 3 was not calculated due to a lack of data.

### Calculation sheets

The final overview of all the calculations for 2024 can be found in the data files mentioned in the factsheet below.

List of the calculation sheets	Location
251220_rekensheet_zorg_NWB_2024	\\Werkmap\Zorg\f4. Berekening NWB
251220_Scope 1 en 2 Republiq NWB	\\Werkmap\Zorg\f4. Berekening NWB
251220_Scope 1,2 en 3 Milieubarometer NWB	\\Werkmap\Zorg\f4. Berekening NWB
251030_Scope 3 Kengetallen NWB	\\Werkmap\Zorg\f4. Berekening NWB
251220_Scope 1 en 2 Republiq NWB - jaar 2018	\\Werkmap\Zorg\f4. Berekening NWB
251220_Scope 1 en 2 Republiq NWB - jaar 2023	\\Werkmap\Zorg\f4. Berekening NWB

# 9 Drinking water utilities

## 9.1 Results drinking water utilities

In 2024, the drinking water utilities account for a small share of the bank's loan portfolio, representing 2.4% of the total.

### 9.1.1 Coverage ratio and attribution

The GHG footprint has been calculated for 98.9% of the loan portfolio within the drinking water utilities in 2024, which is an increase compared to 2023. Between 2019 and 2020 the calculation method for the drinking water utilities has changed and the coverage ratio and financed GHG emissions for 2018 cannot be recalculated. Therefore, 2020 is the reference year for drinking water utilities instead of 2018.

Between 2023 and 2024, the outstanding loan volume increased by 231 million euro. The loan portfolio of clients with a calculated GHG footprint increased by 245 million euro. The total balance sheet of clients with a calculated GHG footprint increased by 441 million euro. As a result, the ratio of the loan portfolio to the total balance sheet has increased compared to last year, meaning that the attribution to NWB Bank increased. For 2020, 2023 and 2024, the loan portfolio, the total balance sheet and the coverage ratio are shown in Table 9-1.

Table 9-1 Loan portfolio and coverage ratio and ratio loan portfolio versus total balance sheet for the drinking water utilities in 2020, 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated*
2020	836	1.7	820	98.1	6,241	0.13
2023	1,214	2.1	1,185	97.5	7,181	0.16
2024	1,445	2.4	1,430	98.9	7,622	0.19

## 9.1.2 Financed GHG emissions

Table 9-2 shows the calculated GHG footprint results for the drinking water utilities in 2020, 2023 and 2024.

Table 9-2 Absolute and relative financed GHG emissions for the drinking water utilities in 2020, 2023 and 2024

Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)			Financed GHG emissions (%)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)		
	2020	2023	2024	2020	2023	2024	2020	2023	2024
1	7,535	9,080	11,990	20.5	26.0	24.9	9.2	7.7	8.4
2	19,012	13,002	20,757	51.8	37.2	43.0	23.2	11.0	14.5
3	10,174	12,846	15,477	27.7	36.8	32.1	12.4	10.8	10.8
<b>Total</b>	<b>36,721</b>	<b>34,928</b>	<b>48,223</b>	<b>100.0*</b>	<b>100.0*</b>	<b>100.0*</b>	<b>44.8</b>	<b>29.5</b>	<b>33.7</b>
<b>Total 1-2</b>	<b>26,547</b>	<b>22,082</b>	<b>32,747</b>	<b>72.3</b>	<b>63.2</b>	<b>67.9</b>	<b>32.4</b>	<b>18.6</b>	<b>22.9</b>

\*The sum in these columns is not always exactly 100% due to rounding per sector

Between 2023 and 2024 the absolute GHG emissions increased by 13,295 tonnes. This increase is partly due to the increase in coverage rate. Compared to 2023, emissions are reported for one additional client, which accounts for approximately 4% of the total financed GHG emissions. Besides, the ratio loan to total balance sheet increased for several clients compared to 2023. When zooming in on the relative financed GHG emissions - therefore excluding these factors that affect the absolute financed GHG emissions - an increase can be observed of 4.2 tCO<sub>2</sub>e per million euro. The biggest increase can be seen for scope 2 electricity consumption. For all drinking water utilities, the electricity consumption increased.

The primary task of the drinking water utilities is to produce and deliver safe and reliable drinking water at acceptable costs. Some drinking water utilities still rely on fossil fuel for purifying water and to prepare, transport and distribute drinking water. However, a large part of the energy consumption in the drinking water chain is the energy used to heat water in individual households. Therefore, drinking water utilities, water authorities and municipalities need to work together to make the drinking water chain more sustainable.

Compared to last year (2023), two emission categories have been refined. Companies can now report other fuel types used for heating besides natural gas. This change is in line with the methodology used by Vewin. Besides, drinking water utilities have been asked explicitly to report fuel used by vessels this year. This needs to be considered when comparing 2023 to 2024 emissions.

Avoided financed emissions are reported in Table 9-3. The avoided financed emissions are from self-generated green electricity that is fed back into the grid.

Compared to 2023, both the absolute and relative financed avoided GHG emissions decreased. Less electricity had been fed back into the grid for all drinking water utilities (which feed electricity back). Besides avoided emissions, drinking water utilities report financed captured emissions. These emissions are the CO<sub>2</sub>e emissions which are captured in the water softening installations.<sup>62</sup> This applies to drinking water utilities that use surface water. Compared to last year, the financed absolute removals increased. Both avoided and captured emissions are not included in the results in Table 9-2 but are reported separately in Table 9-3.

**Table 9-3** Avoided financed GHG emissions for the drinking water utilities in 2023 and 2024

Year	Financed avoided GHG emissions* (tCO <sub>2</sub> e/year)	Relative financed avoided GHG emissions (tCO <sub>2</sub> e/million euro)	Financed removals: GHG emissions captured in water softening installations (tCO <sub>2</sub> e/year)	Relative financed removals: GHG emissions captured in water softening installations (tCO <sub>2</sub> e/million euro)
2023	737	0.6	855	0.7
2024	321	0.2	924	0.6

\*Avoided GHG emissions are gross avoided GHG emissions. Data to calculate net avoided emissions were not available

## 9.2 Drinking water utilities approach

### 9.2.1 Scopes 1, 2 and 3

#### General factsheet

##### Scopes covered

For the drinking water utilities approach scopes 1, 2 and parts of scope 3 are covered.

##### Portfolio covered

The portfolio coverage ratio for this sector is 98.9%.

<sup>62</sup> KWR Praktijkcodes (2023). [Berekening CO<sub>2</sub>-voetafdruk van drinkwaterbedrijven](#) (Dutch website).

## Data

Data to calculate the GHG emissions for scopes 1, 2 and 3 were obtained from Vewin (benchmark) and the individual drinking water utilities.

Total balance sheet data are taken from the annual reports of the drinking water utilities. For one drinking water utility the annual financial report was not available. The total balance sheet data of this drinking water utility were requested from the drinking water utility itself.

## Grid emission factors

Section 2.4 provides further information on emission factors.

The following emission factors from Appendix A were used:

- Natural gas
- Global warming potential methane
- Average heating networks
- Car, unknown fuel & weight
- Public transport in general (traveled kms; type of transport unknown)
- Public transport in general (traveled kms; Bus, Tram, Metro average)
- Public transport by train (traveled kms; unknown train type)
- Petrol (E10) (NL)
- Diesel (B7) (NL)
- Biodiesel (HVO)
- Bio-diesel (FAME)
- Bio-CNG
- Electricity (grey)
- Electricity (unknown source)
- Electricity (Wind Power/Hydropower/Solar Energy/Biomass)
- Air travel <700 km
- Air travel 700-2500 km
- Air travel >2500 km
- Bulk goods, Truck, unit with semi-trailer heavy
- LPG (NL)
- Nitrous oxide
- Propane
- Pellets from (dry) industrial waste stream (NL)/Pellets from fresh wood (NL)
- Motorcycle
- Bicycle
- Moped, average
- Car, Electric

## Calculation steps

Scope 1 contains:

- CH<sub>4</sub> and CO<sub>2</sub> emissions during extraction and treatment of groundwater
- Emissions from the use of natural gas
- Emissions from the use of aggregates
- Emissions from company cars and vessels
- Emissions from own energy generation

Methane emissions released during aeration were multiplied by the emission factor for methane.

The amount of natural gas used for heating was multiplied by the emission factor for natural gas. The amount of green gas used for heating was multiplied by the emission factor for bio-CNG.

Emissions from the use of aggregates did not need to be calculated.

To calculate the GHG emissions for the car fleet and vessels, the litres of fuel used were multiplied by the corresponding emission factor, or the kilometres driven were multiplied by the emission factor for a car of unknown fuel and weight class.

Self-generated energy for the drinking water utilities is mainly produced by solar panels and the emission factor is 0. The GHG emissions of the individual scope 1 items were added together to calculate the total scope 1 GHG emissions.

Scope 2 contains:

- Indirect emissions for purchased energy.

CO<sub>2</sub>emissiefactoren.nl prescribes the use of the emission factor for grey electricity to calculate the GHG emissions for the purchase of green electricity from abroad. The amount of electricity purchased from abroad and the amount of purchased grey electricity were multiplied by the emission factor for grey electricity. Zero emissions were included for green electricity purchased from the Netherlands.

The GHG emissions of the individual scope 2 items were added together to calculate the total scope 2 GHG emissions.

Scope 3 contains:

- (Air) travel
- Chemicals
- Transport by third parties (suppliers of chemicals and materials)
- Transport of drinking water production residues
- Purchase of drinking water and/or semi-finished products if purchased from a drinking water utility outside NWB Bank's loan portfolio.

For air travel the number of kilometres was multiplied by the corresponding emission factor.

To calculate the GHG emissions for other forms of transportation (car use, train, public transport in general, motorcycle, moped or bicycle) – both business and commuting - the kilometres travelled were multiplied by the corresponding emission factor depending on the mode of transportation

Emission factors for chemicals are not described on CO2emissiefactoren.nl. Drinking water utilities obtain the emission factors for chemicals from their suppliers or from another source. There is no insight into the details of chemical use of each drinking water utility. Therefore, the kgCO<sub>2</sub>e for chemicals from the Vewin (benchmark) were used. It is possible that in some cases this also includes transport of chemicals, which could lead to double counting.

The GHG emissions from the transport of chemicals and other materials by third parties were calculated by multiplying the tonne-kilometres by the emission factor for bulk and goods transport (bulk goods, truck, unit with semi-trailer heavy). The emission factor used was the one most frequently used by CO2emissiefactoren.nl.

If the drinking water utility purchases drinking water and/or semi-finished products from a drinking water utility that is not in NWB Bank's loan portfolio, the emissions associated with these purchases are included. No calculation was required for this step.

The GHG emissions of the individual scope 3 items were added together to calculate the total scope 3 GHG emissions.

One drinking water utility only provided their total GHG emissions per scope, therefore these totals do not consist of individual items.

After calculating scopes 1, 2 and 3 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loans to total balance sheet is 25%, 25% of the drinking water utility's scope 1, 2, and 3 GHG emissions are attributed to NWB. The financed GHG emissions per company are added up to result in the total financed GHG emissions per sector.

The financed GHG emissions and relative financed emissions are reported per scope. The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

## Avoided emissions

Drinking water utilities make investments that result in avoided emissions. If a drinking water utility generates its own green electricity and feeds it into the national grid, this is reported as avoided emissions. The electricity generated is multiplied by the emission factor for grey energy.

## Asset class specific considerations

The approach for drinking water utilities is in line with the public loan approach in the PCAF methodology.

## Attribution

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

## Absolute vs. relative emissions

For the drinking water utilities, the total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for which a GHG footprint was calculated in this report.

## Limitations

The Dutch drinking water utilities have published a methodology for calculating the GHG footprint.<sup>63</sup> This methodology is also based on the GHG Protocol. The methodology of the drinking water utilities has a standard calculation approach. This approach can be extended with additional options that can be added to the calculation. Although this methodology for calculating the GHG footprint of drinking water utilities has been published, there are still differences in the way the different drinking water utilities calculate their own GHG footprint. One could say that the standard calculation method is a golden mean but deviates from the real

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<sup>63</sup> KWR Praktijkcodes (2023). [Berekening CO2-voetafdruk van drinkwaterbedrijven](#) (Dutch website).

GHG footprint. Scope 3, for example, is incomplete and which emissions are included in scope 1, 2 or 3 varies between the drinking water utilities.

A limitation is that one drinking water utility only shared the total GHG emissions per scope. These emissions are based on 'Well to Wheel' but lack the detailed information to calculate all the individual items in scopes 1, 2 and 3 based on 'Tank to Wheel'. It is not possible to make a good conversion factor based on the other drinking water utilities to convert the GHG emissions based on 'Well to Wheel' to GHG emissions based on 'Tank to Wheel'. Therefore, the GHG emissions of this drinking water utility were included in the calculation based on 'Well to Wheel' and results in an overestimation of the GHG emissions based on 'Tank to Wheel'.

Scope 3 has several limitations. As mentioned earlier, the emission factors for chemicals are not described on CO2emissiefactoren.nl. Drinking water utilities obtain the emission factors for chemicals from their suppliers or from another source. There was no insight into the chemical details of each drinking water utility. Therefore, kgCO<sub>2</sub>e for chemicals was used, which was included in the data obtained from the Vewin benchmark. It is possible that in some cases this includes transport of chemicals, which could lead to double counting.

For the transport of drinking water production residues and transport of third parties, there are several uncertainties. For this report, it is possible that a different emission factor has been used than that used by the drinking water utilities, as there are several options on CO2emissiefactoren.nl in the category bulk and goods transport. It was decided to use the emission factor that CO2emissiefactoren.nl has identified as the most common.

There may also be differences in what the drinking water utilities include in the transport of third parties. Some only include the transport of chemicals, others include more items. These details are not known.

If the drinking water utility purchases drinking water and/or semi-finished products from a drinking water utility that is not in NWB Bank's loan portfolio, the emissions related to these purchases are based on 'Well to Wheel' and result in an overestimation of the GHG emissions based on 'Tank to Wheel'.

One of the drinking water utilities in NWB Bank's loan portfolio is owned by and operates for two other drinking water utilities. The drinking water utility supplies a semi-finished product to two other drinking water utilities. The GHG footprint of this drinking water utility is included in these other drinking water utilities. The loans to this drinking water utility that supplies a semi-finished product to the other drinking water utilities were allocated to these two drinking water utilities based on the volume of water that was delivered to them compared to the total volume of water supplied to 4 clients (being the 2 drinking water utilities and 2 other companies).

### Data quality estimate

The GHG emissions were calculated based on data provided by the water companies themselves, but the data are not audited. Therefore, the data quality score for scopes 1 and 2 is 2.

Scope 3 GHG emissions are less certain than for scopes 1 and 2 because some details are missing, e.g. distances travelled are known, but details on the means of transport are sometimes missing. Therefore, the data quality score is 3.

### Calculation sheets

The final overview of all the calculations for 2024 can be found in the data file mentioned in the factsheet below.

List of the calculation sheets	Location
250922 Waterleidingbedrijven 2024 NWB.xlsx	\Werkmap\Waterleidingbedrijven\f3. Berekening NWB

# 10 Educational institutions

## 10.1 Results educational institutions

In 2024, the education sector accounts for a small share of the bank's loan portfolio, representing 0.1% of the total.

### 10.1.1 Coverage ratio and attribution

The GHG footprint has been calculated for 100% of the loan portfolio within the education institutions in 2024. Between 2023 and 2024, the outstanding loan volume decreased by 9 million euro. The coverage ratio has remained stable compared to 2023 and was 100%. The total balance sheet of clients with a calculated GHG footprint increased by 19 million euro. As a result, the ratio of the loan portfolio to the total balance sheet has decreased causing a lower attribution to NWB Bank compared to last year. For 2018, 2023 and 2024, the loan portfolio, the total balance sheet and the coverage ratio are shown in Table 10-1.

Table 10-1 Loan portfolio, coverage ratio and ratio loan portfolio versus total balance sheet for the educational institutions in 2018, 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated*
2018	73	0.2	70	97.1	666	0.11
2023	79	0.1	79	100.0	873	0.09
2024	70	0.1	70	100.0	892	0.08

\*In 2023, the total balance sheets for 1 educational institution, was unavailable. For this institution, a loan-to-balance-sheet ratio was calculated using the average loan-to-balance-sheet ratio of the other institutions. An average ratio of 0.26 was applied for 2023.

## 10.1.2 Financed GHG emissions

Table 10-2 shows the calculated GHG footprint results for education institutions in 2018, 2023 and 2024.

Table 10-2 Absolute and relative financed GHG emissions for the educational institutions in 2018, 2023 and 2024

Source of emissions	Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)			Financed GHG emissions (%)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)		
		2018	2023	2024	2018	2023	2024	2018	2023	2024
Natural gas use	1	181	589	565	55.6	55.0	53.5	2.6	7.5	8.1
Electricity use	2	145	483	491	44.4	45.0	46.5	2.1	6.1	7.0
<b>Total</b>	<b>1-2</b>	<b>325</b>	<b>1,073</b>	<b>1,056</b>	<b>100.0*</b>	<b>100.0*</b>	<b>100.0*</b>	<b>4.6</b>	<b>13.6</b>	<b>15.1</b>

\*The sum in these columns is not always exactly 100% due to rounding per sector

Table 10-3 Financed GHG emissions per financed floor area (m<sup>2</sup>) for the educational institutions in 2018, 2023 and 2024

Year	Financed GHG emissions real estate related (kgCO <sub>2</sub> e) / financed m <sup>2</sup>
2018	31.6
2023	22.6
2024	20.5

Between 2023 and 2024 the total absolute financed GHG emissions decreased by 17 tonnes. The emissions for scope 1 natural gas decreased, while the emissions for scope 2 electricity increased. The relative financed GHG emissions increased by 1.5 tonnes CO<sub>2</sub> per million euro between 2023 and 2024. The increase is seen for both scope 1 natural gas and scope 2 electricity. To be able to compare energy consumption regardless of differences in client sets, financed GHG emissions are expressed in relation to financed surface of buildings. This number decreased by 2.1 kgCO<sub>2</sub>e/m<sup>2</sup> between 2023 and 2024.

For educational institutions, it is often challenging to make buildings more sustainable to meet the climate targets. However, efforts taken are reflected in the decreased emissions. Although the education sector is a relatively small sector within the NWB Bank's loan portfolio, NWB Bank can still help institutions to become more sustainable.

## 10.2 Educational institutions approach

### 10.2.1 Scopes 1 and 2

#### Adjustments in methodology

To estimate energy consumption, Republiq uses key figures provided by Vivet.<sup>64</sup> These figures became available this year for 2022 and 2023. As the methodology differs from that used in previous years, the GHG emissions for 2018 and 2023 have also been recalculated using these updated figures. For 2018 and 2024, an estimate has been made based on the trends in energy consumption as published by CBS.<sup>65</sup> For primary and secondary education, key figures from Vivet are used, with a breakdown by construction period. For higher education, key figures from CBS are applied, broken down by building surface categories.

The differences between the results of the new and previous methodology are shown in Table 10-4.

Table 10-4 Effect of change in methodology on the GHG emissions in tCO<sub>2</sub>e

Source of emissions	Scopes	New	Previous	Difference (%) *	New	Previous	Difference (%) *
		2023	2023	2023	2018	2018	2018
Natural gas use	1	589	581	1.4	181	126	43.4
Electricity use	2	483	506	-4.4	145	145	-0.2

\*The difference is calculated with the following formula: (New-Previous)/Previous\*100

#### General factsheet

##### Scopes covered

The education sector covers both scopes 1 and 2. Scope 1 emissions are direct GHG emissions. These emissions result from the consumption of natural gas to heat buildings or for other purposes. Scope 2 emissions are the indirect GHG emissions from the consumption of purchased electricity, heat or steam. The consumption of heat and steam per educational institution is not known. Scope 2 therefore only includes purchased electricity.

##### Portfolio covered

The portfolio coverage ratio for this sector is 100%.

<sup>64</sup> VIVET (n.d.). [Energieverbruik maatschappelijk vastgoed](#) (Dutch website).

<sup>65</sup> CBS (2025). [Energiebalans: aanbod en verbruik, sector](#) (Dutch website).

## Data

The energy consumption data of educational institutions are based on key figures on energy consumption for the education sector from Vivet and CBS.

Data of the total balance sheet per educational institute per year, are coming from DUO, the Dutch Education Service of Ministry of Education, Culture and Science.

## Grid emission factors

Section 2.4 contains more information on emission factors.

The following emission factors from Appendix A were used:

- Natural gas
- Electricity (Unknown source)

## Calculation steps

The following steps were performed by Republiq:

1. Inventory of buildings owned by educational institutions
2. Estimate energy consumption data

1. Inventory of buildings owned by educational institutions

Republiq has made a list of all the buildings that are owned by the educational institutions that are clients at NWB. To create this list for primary and secondary schools, Republiq made use of data from DUO (Dienst Uitvoering Onderwijs). For some missing primary and secondary schools and for higher education, Republiq manually looked up which buildings are used by the educational institutions or Republiq has obtained these data from Kadaster.

2. Estimate energy consumption data

To estimate energy consumption, Republiq uses key figures provided by Vivet.<sup>66</sup> In the Vivet project, CBS and Kadaster collaborated to provide insights into energy consumption across various sectors of public real estate. The key figures are available for the years 2022 and 2023. For 2024 and 2018, an estimate has been made on the trends in energy consumption as published by CBS.<sup>67</sup>

Republiq combines these estimates with the dataset from step 1.

Republiq provided Het PON & Telos with the following data:

- Total electricity consumption (in kWh)
- Total gas consumption (in Nm<sup>3</sup>)

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<sup>66</sup> VIVET(n.d.). [Energieverbruik maatschappelijk vastgoed](#) (Dutch website).

<sup>67</sup> CBS (2025). [Energiebalans: aanbod en verbruik, sector](#) (Dutch website).

- Floor area (m<sup>2</sup>)

The next step was carried out by Het PON & Telos:

The total energy consumption per educational institution was converted into kg GHG emissions using the emission factor for electricity (unknown source) and natural gas consumption (see Appendix A). These GHG emissions in kg were divided by 1,000 to obtain GHG emissions in tonnes.

After calculating scopes 1 and 2 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loans to total balance sheet is 25%, 25% of the education institution's scope 1, 2 and 3 GHG emissions are attributed to NWB. The financed GHG emissions per client are added up to obtain the total financed GHG emissions per sector.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for which a GHG footprint was calculated in this report.

#### **Floor area**

The source of the floor area data is the Basic Registration of Addresses and Buildings (BAG). The reference date for the total floor area of buildings owned by municipalities is 1-1-2025. To calculate the financed GHG emissions per financed m<sup>2</sup>, the total attributed GHG emissions in tCO<sub>2</sub>e for the educational institutions were divided by the total financed floor area (m<sup>2</sup>) of the educational institutions.

#### **Avoided emissions**

The avoided emissions for the educational institutions are not known and therefore not reported in this report.

#### **Asset class specific considerations**

For the calculation based on energy consumption data, the approach for the educational institutions is in line with the 'Commercial real estate' approach in the PCAF methodology.

#### **Attribution**

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the NWB's share of the total balance sheet is used to determine the share of GHG emissions for which NWB is responsible.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

### Absolute vs. relative emissions

The financed GHG emissions and relative financed emissions are reported per scope in tonnes CO<sub>2</sub>e.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for which a GHG footprint was calculated in this report.

The relative financed emissions in tCO<sub>2</sub>e / m<sup>2</sup> were calculated by dividing the financed GHG emissions by the attributed m<sup>2</sup> of the clients for which a GHG footprint was calculated in this report.

### Limitations

The actual consumption of natural gas and electricity by the education institutions is not known. Energy consumption has been estimated based on key figures. This is less accurate than actual consumption.

Ideally, GHG emissions of cars in possession of educational institutions should also be part of scope 1. Unfortunately, these data are not available.

Some primary school buildings are in possession of municipalities. It might be possible that for some primary school buildings energy consumption is included in the GHG emissions of municipalities.

### Data quality estimate

The data quality score is 3. Energy consumption data are based on averaged data that is peer/(sub)-sector-specific, therefore data quality score is 3.

### Calculation sheets

The final overview of all the calculations for 2018, 2023 and 2024 can be found in the data files mentioned in the factsheet below.

List of the calculation sheets	Location
bNWB.tOnderwijs_Leningportefeuille.csv bDUO.tOnderwijs_PassivaNWB.csv bRepubliq.tNWB_Onderwijs_Energieverbruik_versie2025.csv	Werkmap\Onderwijs\d. Data voor SQL
emissiefactoren - PCAF 2025.csv	Werkmap\Emissiefactoren\c. Voorbewerkte data
250924_NWB_Onderwijs_2018_versie2025.ipynb 250924_NWB_Onderwijs_2023_versie2025.ipynb 250924_NWB_Onderwijs_2024.ipynb	Werkmap\Onderwijs\e. SQL notebooks

251001 pNWB.tOnderwijs_2018_CO2voetafdruk_Absoluu t_Totaal_versie2025.xlsx	Werkmap\Onderwijs\f1. Data uit SQL NWB
251001 pNWB.tOnderwijs_2018_CO2voetafdruk_Absoluu t_TypeOW_versie2025.xlsx	
251001 pNWB.tOnderwijs_2018_CO2voetafdruk_Relatief_ Totaal_versie2025.xlsx	
251001 pNWB.tOnderwijs_2018_IndividueleKlanten_versi e2025.xlsx	
251001 pNWB.tOnderwijs_2018_Ratio_Lening_Passiva_v ersie2025.xlsx	
250924 pNWB.tOnderwijs_2023_CO2voetafdruk_Absoluu t_Totaal_versie2025.xlsx	
250924 pNWB.tOnderwijs_2023_CO2voetafdruk_Relatief_ Totaal_versie2025.xlsx	
250924 pNWB.tOnderwijs_2023_IndividueleKlanten_versi e2025.xlsx	
250924 pNWB.tOnderwijs_2023_Ratio_Lening_Passiva_v ersie2025.xlsx	
250924 pNWB.tOnderwijs_2024_CO2voetafdruk_Absoluu t_Totaal_versie2025.xlsx	
250924 pNWB.tOnderwijs_2024_CO2voetafdruk_Relatief_ Totaal_versie2025.xlsx	
250924 pNWB.tOnderwijs_2024_IndividueleKlanten_versi e2025.xlsx	
250924 pNWB.tOnderwijs_2024_Ratio_Lening_Passiva_v ersie2025.xlsx	

# 11 NHG pass-through RMBS

## 11.1 Results NHG pass-through RMBS

This chapter covers loans to NHG pass-through RMBS. NWB Bank indirectly contributes to the financing and affordability of private residential mortgages by investing in so-called pass-through NHG RMBS bonds. These are residential mortgage-backed securities based on National Mortgage Guarantee mortgages issued by a Dutch bank. NHG pass-through RMBS represents a small portion of the bank's loan portfolio, accounting for 4.8% of NWB Bank's total loan portfolio in 2024.

### 11.1.1 Coverage ratio and attribution

The GHG footprint has been calculated for 92.0% of the loan portfolio for the NHG pass-through RMBS in 2024. Between 2023 and 2024, the outstanding loan volume increased by 225 million euro. The loan portfolio of clients with a calculated GHG footprint increased by 211 million euro. The property value at origination increased as well. The ratio of the loan portfolio to the property value at origination slightly decreased. For 2023 and 2024, the loan portfolio, the property value at origination and the coverage ratio are shown in Table 11-1.

The coverage ratio has increased by 0.2%-point between 2023 and 2024.

Table 11-1 Loan portfolio, coverage ratio and ratio loan portfolio versus property value at origination for NHG pass-through RMBS in 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Property value at origination (million euro)	Ratio loan portfolio / property value at origination
2023	2,638	4.6	2,422	91.8	3,210	0.75
2024	2,864	4.8	2,633	92.0	3,536	0.74

### 11.1.2 Financed GHG emissions

The results of NWB Bank's financed calculated GHG footprint of the NHG pass-through RMBS for 2023 and 2024 are shown in Table 11-2.

Table 11-2 Absolute and relative financed GHG emissions for NHG pass-through RMBS in 2023 and 2024

Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)		Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)	
	2023	2024	2023	2024
Scopes 1+2	51,618	54,182	21.3	20.6

The total financed GHG emissions have increased by 2,563 tonnes, but the relative financed GHG emissions have decreased by 0.7 tonnes per million euro. The total financed GHG emissions have increased due to an increase in the loan volume and an increase in the loans with a calculated GHG footprint.

## 11.2 NHG pass-through RMBS approach

### 11.2.1 Scopes 1 and 2

#### General factsheets

##### Scopes covered

For NHG pass-through RMBS scopes 1 and 2 are covered, but these are calculated under the heading of total energy consumption. Scope 1 and 2 are therefore not shown separately in the results.

##### Portfolio covered

The portfolio coverage ratio for this sector is 92.0%.

##### Data

Individual house data such as house type, energy label and floor area were obtained from NWB Bank.

##### Grid emission factors

Emission factors were used from the PCAF European Building Emission Factor Database for the asset class Mortgages. The emission factor used is tCO<sub>2</sub>e/m<sup>2</sup>. Unfortunately, the European Building Emission Factor Database for the asset class

Mortgages is no longer being updated, and for the 2024 calculations the 2023 emission factor was used for 2024.

### Calculation steps

For each house it was determined whether it was a single-family or multi-family house. An apartment is classified as a multi-family house and other house types are classified as single-family houses. Based on the energy label and whether the house is a single-family or multi-family house, the emission factor tCO<sub>2</sub>e/m<sup>2</sup> was selected and then multiplied by the living area of the dwelling. This gives the GHG emissions per house.

Together with the energy label it was indicated for each mortgage whether the energy label was final or provisional. Even though some energy labels are provisional, the emission factor was still selected based on this energy label.

Some houses did not have an energy label. In this case, label G was used for the calculations. This choice has been made to ensure that the calculated GHG footprint is not underestimated.

The GHG emissions per house were multiplied by the ratio of the outstanding amount to the value of the property at origination to calculate the GHG emissions allocated to the NWB Bank (financed GHG emissions).

A few ratios of outstanding amount to property value at origination were 1 or slightly higher. The reason for a ratio higher than 1 is that the client still has a bridging loan or is using part of it for sustainability measures. For the calculation of the financed GHG emissions the ratios greater than 1 were set at 1.

### Avoided emissions

Avoided emissions are not considered in the calculations.

### Asset class specific considerations

The approach for the NHG pass-through RMBS is in line with the 'Mortgages' approach in the PCAF methodology.

### Attribution

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Subsequently the following formula has been used to determine which part of the emissions NWB Bank is accountable for.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Property value at origination}}$$

Finally, the sum of the scopes of all individual mortgages have been aggregated.

### Absolute vs. relative emissions

For NHG pass-through RMBS, total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for whom a GHG footprint was calculated in this report.

### Limitations

The actual energy consumption per house was not known. Therefore, an emission factor based on the type of house and energy label in tCO<sub>2</sub>e/m<sup>2</sup> was used.

Unfortunately, the European Building Emission Factor Database for the asset class Mortgages is no longer being updated, and for the 2024 calculations the 2023 emission factor was used for 2024.

### Data quality estimate

The data quality score is 3.

In the PCAF European Building Emission Factor Database the data quality is indicated by a data quality score 3 (option 2a in Table 5-15 on page 98 of the report PCAF (2022)).<sup>68</sup>

### Calculation sheets

The final overview of all the calculations for 2024 can be found in the data file mentioned in the factsheet below.

List of the calculation sheets	Location
250825_Berekening Hypotheken NWB	\\Werkmap\NHG pass-through RMBS NWB\3. Berekening NWB

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<sup>68</sup> PCAF (2022). [The Global GHG Accounting and Reporting Standard Part A: Financed Emissions](#). Second edition.

## 12 Renewable electricity

### 12.1 Results renewable electricity

The renewable electricity sector is a small sector within NWB Bank's loan portfolio. It contains all wind and solar parks. The sector accounts for 1.7% of the bank's loan portfolio. GHG emissions are calculated for the production, installation, maintenance and dismantling of wind turbines and solar panels of the parks that were in operation in 2024.

This sector is very important for the energy transition and the reduction of greenhouse gas emissions. Investments in this sector will contribute to the greening of our national electricity grid. In this chapter, the financed generated and avoided GHG emissions are presented separately. The financed generated GHG emissions from this sector occur during production, installation, maintenance and dismantling of wind turbines and solar panels. These emissions are not released gradually over the course of a year but at specific times during their lifecycle. Nevertheless, these emissions are calculated and reported on an annual basis in this report.

### 12.2 Coverage ratio and attribution

The calculated GHG footprint for the production, installation, maintenance and dismantling of wind turbines and solar panels had been calculated for 89.0% of the loan portfolio within the wind and solar energy sector in 2024. On average, loans from NWB Bank represent 31% of the total balance sheet of the clients in the wind and solar energy sector. Accordingly, NWB Bank bears responsibility for an average of 31% of the GHG emissions and avoided GHG emissions linked to the wind and solar parks within its portfolio.

Table 12-1 Loan portfolio, coverage ratio and ratio loan portfolio versus total balance sheet for the wind and solar energy sector in 2023 and 2024

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated
2023	994	1.7	881	88.6	2,421	0.36
2024	1,045	1.7	931	89.0	3,002	0.31

### 12.2.1 Financed GHG emissions

Total GHG emissions for all wind parks and solar parks for production, installation, maintenance and dismantling were 17,357 tCO<sub>2</sub>e for 2024. The gross financed avoided emissions were 893,096 tCO<sub>2</sub>e for 2024.

Table 12-2 Absolute and relative financed GHG emissions for production, installation, maintenance and dismantling of wind parks and solar parks

Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)		Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)	
	2023	2024	2023	2024
Wind parks: Production, installation, maintenance, dismantling	11,210	12,759	14.1	15.3
Solar parks: Production, installation, maintenance, dismantling	3,950	4,599	47.1	47.7

Table 12-3 Absolute and relative financed gross avoided GHG emissions of wind parks and solar parks

Scopes	Financed avoided GHG emissions (tCO <sub>2</sub> e/year)		Relative financed avoided GHG emissions (tCO <sub>2</sub> e/million euro)	
	2023	2024	2023	2024
Wind parks	652,942	831,473	819.5	996.9
Solar parks	45,034	61,623	537.0	638.8

## 12.3 Renewable electricity sector approach

### 12.3.1 Scope 3

#### General factsheet

##### Scopes covered

Scope 3

The GHG emissions generated during production, installation, maintenance, and dismantling fall under Scope 3.

##### Portfolio covered

The renewable electricity (wind and solar energy) coverage ratio for 2024 is 89.0%.

##### Data

Data on estimated actual energy production in 2024, types of wind turbines and total balance sheet were obtained from NWB bank.

Data on GHG emissions from production, installation, maintenance and dismantling were obtained from the wind turbine manufacturers or, where this information was not available, from scientific literature. For all solar panels, this information was not available and was taken from scientific literature.

##### Grid emission factors

Not applicable for generated GHG emissions. For the calculation of the gross avoided GHG emissions, the emission factor for grey electricity (WTW) was used. Here, the WTW emission factor is deliberately used so that the net avoided emissions could be calculated: avoided emissions minus generated emissions.

##### Calculation steps

For wind parks and solar parks, the GHG emissions for production, installation, maintenance and dismantling were calculated using the renewable electricity production for 2024 from the file received from NWB. Only the parks in operation in 2024 were considered. This electricity production is taken from the verified annual production or project documentation (theoretical production P90) or it is calculated by multiplying the installed capacity by the production factor. The electricity production was multiplied by an emission factor that indicates how many emissions are released per kWh for production, installation, maintenance and dismantling. This emission factor was taken from the LCA of the wind turbine in question where possible, otherwise a general emission factor based on scientific

literature was used. For all solar panels, this information was not available and was taken from scientific literature. This resulted in the GHG emissions for production, installation, maintenance and dismantling.

To calculate avoided GHG emissions, renewable electricity generation for 2024 was multiplied by the grey electricity emission factor (WTW).

After calculating the (generated and avoided) GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loans to total balance sheet is 25%, 25% of the emissions are attributed to NWB Bank. The financed GHG emissions per client are added up to result in the total financed GHG emissions per sector.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for whom a GHG footprint was calculated in this report.

### **Avoided emissions**

Table 12-3 presents the gross avoided emissions for the wind and solar parks.

By 2035, NWB Bank aims to finance renewable energy production equivalent to the total fossil energy consumption of its loan portfolio. Further details of this ambition can be found in NWB Bank's annual reports.

### **Asset class specific considerations**

For the wind and solar energy sector, the methodology of asset class 'Project finance' is followed.

### **Attribution**

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the bank's share of the total balance sheet is used to determine the share of GHG emissions for which NWB Bank is responsible.

$$\sum CO_2eq \times \frac{\text{Outstanding loan volume}}{\text{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual wind parks and solar parks were aggregated.

### **Absolute vs. relative emissions**

For the wind and solar energy sector, the total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e.

The relative financed GHG emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for whom a GHG footprint was calculated in this report.

### Limitations

For some wind turbines, the GHG emissions in grams per kWh for production, installation, maintenance and dismantling were not known. In this case, data from scientific literature was used to determine the best value to use.

For all solar panels, this information was not available and was taken from scientific literature.

The coverage ratio is based on being or not being operational in 2024. If parks were not operational in 2024, no GHG emissions were calculated.

### Data quality estimate

Data quality score is 3. GHG emissions are calculated based on energy production data received from the wind parks themselves, but the data are not subject to insurance. Information on GHG emissions for production, installation, maintenance and dismantling is mainly obtained from scientific literature. Therefore, the data quality score is 3.

### Calculation sheets

The final overview of all the calculations for 2024 can be found in the data file mentioned in the factsheet below.

List of the calculation sheets	Location
250820_Berekening_Windparken_Zonneparken_NWB_2024.xlsx	\Werkmap\Wind- en Zonneparken\NWB\3. Berekening NWB

# 13 Other sectors

## 13.1 Results Other sectors

This chapter covers loans to various other sectors. The CO<sub>2</sub>e footprint has been calculated for several different sectors but is presented as a total in this chapter. It includes credit institutions, other financial institutions, nonfinancial corporates, other public organisations and joint regulations. Clients range from banks to tennis clubs, football clubs, port companies, energy and waste management companies, public transport and security regions. It is therefore a very diverse group with a wide range of CO<sub>2</sub>e footprints across clients. The other sectors represent a relatively small share within the bank's loan portfolio accounting for 4.2% of the total loan portfolio of NWB Bank in 2024.

### 13.1.1 Coverage ratio and attribution

The GHG footprint was calculated for 100.0% of the other sector loan portfolio in 2024. The coverage ratio **decreased by 1.0%point** compared to last year. Between 2023 and 2024, the outstanding loan volume increased by 32 million Euro. The loan portfolio of clients with a calculated GHG footprint also increased by **45 million** euro. For 2023 and 2024, the loan portfolio and the coverage ratio are shown in Table 13-1.

Total balance sheet data are unavailable for most clients in this sector and is not used in the calculation of attributable financed emissions. Economic-activity based emission factors produce an estimate of the emissions associated with the size of the outstanding loan. The total balance sheet and attribution ratio are therefore excluded from Table 13-1.

Table 13-1 Loan portfolio and coverage ratio for the other sectors in 2023 and 2024  
- means no data are available

Year	Total loan portfolio (million euro)	Percentage of all loans (%)	Loans of clients for which a GHG footprint was calculated (million euro)	Coverage ratio of total loan portfolio (%)	Total balance sheet of clients for which a GHG footprint was calculated (million euro)	Ratio loan portfolio / total balance sheet of clients for which a GHG footprint was calculated
2023	2,502	4.4	2,323	92.8	-	-
2024	2,577	4.2	<b>2,368</b>	<b>91.9</b>	-	-

## 13.1.2 Financed GHG emissions

The results of the calculated GHG footprint of the outstanding NWB Bank loans to other organisations for 2023 and 2024 are shown in Table 13-2.

Table 13-2 Absolute and relative financed GHG emissions for other sectors in 2023 and 2024

Scopes	Financed GHG emissions (tCO <sub>2</sub> e/year)		Financed GHG emissions (%)		Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)	
	2023	2024	2023	2024	2023	2024
1	133,126	138,120	52.1	53.0	57.3	58.3
2	21,860	27,092	8.6	10.4	9.4	11.4
3	100,374	95,618	39.3	36.7	43.2	40.4
<b>Total</b>	<b>255,360</b>	<b>260,830</b>	<b>100.0*</b>	<b>100.0*</b>	<b>109.9</b>	<b>110.2</b>

\*The sum in these columns is not always exactly 100% due to rounding per sector

Between 2023 and 2024, absolute GHG emissions increased by 5,470 tonnes. Financed GHG emissions increased for scope 1 and 2 and decreased for scope 3. The loans to other sectors covered with a calculated GHG footprint increased by 45 million euro (Table 13-1). The total relative financed GHG emissions increased by 0.2 tons per million euro. In conclusion, the financed GHG emissions and the relative financed GHG emissions increased.

The scope 1 and 3 relative emissions in terms of exposure of this group are significantly higher when compared to other sectors. This difference is attributable to a relatively small amount of highly carbon intensive clients, who are responsible for the majority of this sector's financed emissions.

## 13.2 Other sectors approach

### 13.2.1 Scopes 1, 2 and 3

#### General factsheet

This general factsheet below applies to most clients - covering 85% of the outstanding loan portfolio covered by other sectors.

#### Scopes covered

For 'other sectors', scope 1, 2 and 3 are covered. Emissions in the upstream value chain are considered.

Scopes 1 and 2 include the consumption of input fuels, natural gas, electricity, heat and steam. Scope 3 includes other upstream emissions.

### **Portfolio covered**

The 'other sectors' coverage ratio for 2024 is 91.9%.

### **Data**

For 'other sectors', NWB Bank utilised sector average emission intensities from Exiobase for the EU-member state region. No information is available on clients' total balance sheet and therefore an activity-based attributed emission value was calculated corresponding to the loan value at year-end.

The used asset-based emission factors are constructed by PCAF, based on Exiobase input-output tables.

Inflation rate data used for the adjustment of Exiobase factors are derived from the PCAF database of country-based inflation rates.

### **Grid emission factors**

The emission factors for this sector's calculations differ from those used throughout the report. Rather than rely on 'CO2emissiefactoren.nl', a PCAF-designed emission factor is used that combines Exiobase emission factors with in-house development of asset-turnover ratios.

Exiobase emission factors are based on a so-called 'Multi-Regional Environmentally Extended Supply-Use Tables'. The tables present the in- and outflow of goods and services across sectors and countries. Through the linkage of environmental data on GHG emissions, land use and energy consumption, it is possible to calculate the GHG emission impact of transactions; doing so yields a list of revenue-based emission factors, i.e. the emission associated with spending a particular amount in a sector of choice.

In cases where revenue data are missing, 'Asset Turnover Ratio's' may be used. An ATR provides an estimate of the revenue associated with a particular amount of assets held in a sector of choice. PCAF constructed their ATRs from the S&P CapIQ database, in which asset and revenue data for a large number of companies are available.

### **Calculation steps**

It remains elusive to calculate enterprise value or total equity and debt for a few 'other clients' of NWB Bank. To report the associated emissions of this part of the portfolio, NWB Bank turned to the PCAF methodology with data quality score of 5. Executing this calculation (option 3c) entails multiplying the outstanding amount

per client by an emission factor in terms of GHG emissions per unit asset (tCO<sub>2</sub>e / million euro) for the sector.

$$\sum_{c,s} \text{outstanding Amount}_c \times \text{Asset Turnover Ratio}_s \frac{\text{GHG Emissions}_s}{\text{Revenue}_s}$$

1. Calculating asset-based emission factor per scope  
 PCAF performed several calculations to derive the relevant Asset Turnover Ratio and Emissions / revenue factor per Exiobase sector. Asset turnover ratios are calculated based on an average of S&P reported information on companies' assets and revenue, weighted for company assets (size). Emissions factors for GHG emission per unit of revenue were taken from the Exiobase database without further processing. Exiobase provides revenue-based emission intensities by estimating GHG emissions across sectors and regions based on economic transactions and environmental data.
2. Determining sector classification for clients  
 To link clients to the relevant emission factor, NWB Bank devised an internal sector classification mapping to exiobase sector and subsector level. The classification was based on the NAICS mapping table proposed by PCAF or derived from Exiobase descriptions. Client's economic activity was determined through the internal, existing classification (NACE-code), or through publicly available Chamber of Commerce information (self-reported economic activity of the organisation).
3. Adjusting value outstanding for inflation  
 In-line with PCAF's recommended methodology, loan value outstanding was adjusted for the relevant year's inflation factor. The inflation factor used was provided by PCAF.
4. Calculating financed emissions by scope  
 The inflation-adjusted loan value outstanding was multiplied by the relevant PCAF-provided emissions factors for scope 1, 2 and 3, respectively.

### **Avoided emissions**

Exiobase does not provide factors for avoided emissions. Due to its sector-based nature, avoided emissions from own electricity generation and usage is contained and therefore out of scope of calculation.

### **Asset class specific considerations**

The PCAF methodology for asset class 'Business Loans and Unlisted Equity' is followed.

### **Attribution**

Most of the asset class is calculated through asset-based emission factors. In doing so, the attribution is already contained. It is not possible to extrapolate clients' total emissions from the attributed emissions calculated through method 3c.

### **Absolute vs. relative emissions**

The total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e through summing the multiple of the asset-based emission intensity and the outstanding loan value per client.

Relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed emissions by the outstanding loan volume of the clients for whom a GHG footprint was available.

### **Limitations**

A major limitation of applying asset-based emission factors to the NWB Bank loan portfolio consists of the particular client base considered. As the selection of clients is relatively irregular in terms of economic activity, their individual calculated emissions are unlikely to be estimated to a high degree of precision.

GHG emission factors in the Exiobase database are updated irregularly and at significant intervals. Most recent data stems from 2019. Changes in (grid) emission intensities that occurred after this date are not factored in.

### **Data quality estimate**

Data quality score is 5. Only activity-based emission calculations are available for these clients. PCAF advises to aggregate at a sector average level due to data quality concerns at sub-sector level. 83.7% of the total loan portfolio in other sectors receives a data quality score 5 in 2024.

### **General factsheet**

This general factsheet applies to a small number of clients in other sectors where annual report data are used to calculate the financed GHG emissions.

### **Scopes covered**

Scope 1 GHG emissions from buildings and transport. Scope 2 GHG emissions from electricity and heat consumption. For some organisations some business travel data was included in scope 3 GHG emissions.

### **Portfolio covered**

See earlier portfolio covered for other sectors

### **Data**

The data were taken from the organisations' annual reports or from information provided by the organisations themselves.

### **Grid emission factors**

Section 2.4 contains more information on emission factors.

The following emission factors from Appendix A were used:

- Petrol
- Diesel
- Propane
- Natural gas
- Grey energy
- Electricity from unknown sources
- Electricity (Wind Power/Hydropower/Solar Energy/Biomass)
- Car, unknown fuel & weight
- Public transport in general (type of transport unknown)
- Public transport by train
- Air travel < 700 km
- Air travel 700-2500 km
- Air travel >2500 km

For district heating an emission factor from a specific large heat network was used

### **Calculation steps**

Depending on the available data in the annual reports of the organisations the GHG emissions were taken directly from the annual reports or the energy consumption, fuel consumption and travel kilometres were taken from the annual reports and information provided by the organisations themselves to calculate the GHG emissions.

The energy consumption, fuel consumption and travel kilometres were multiplied by the emission factor to result in kgCO<sub>2</sub>e.

The total kgCO<sub>2</sub>e was divided by 1,000 to result in tCO<sub>2</sub>e.

After calculating scopes 1, 2 and 3 GHG emissions, these GHG emissions were multiplied by the ratio of outstanding loan to total balance sheet ratio per client. For example, if the ratio of outstanding loans to total balance sheet is 25%, 25% of the other organisation's scope 1 and 2 GHG emissions are attributed to NWB Bank. The financed GHG emissions per client are added up to result in the total financed GHG emissions per sector.

The financed GHG emissions and relative financed emissions are reported per scope. The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by

dividing the financed GHG emissions by the outstanding loan volume in million euro of the clients for whom a GHG footprint was calculated in this report.

### **Avoided emissions**

Avoided emissions are not considered in the calculations.

### **Asset class specific considerations**

The approach for other organisations is in line with the public loan approach in the PCAF methodology.

### **Attribution**

To calculate the GHG footprint according to the PCAF principles, a general approach has been developed. First, the GHG emissions of the different entities in the sector are calculated. Then, the bank's share of the total balance sheet is used to determine the share of GHG emissions for which NWB Bank is responsible.

$$\sum CO_2eq \times \frac{\textit{Outstanding loan volume}}{\textit{Total balance sheet (equity + debt)}}$$

Finally, the individual scopes and the sum of the scopes of all individual organisations have been aggregated.

### **Absolute vs. relative emissions**

For the other organisations, the total financed GHG emissions were calculated in tonnes CO<sub>2</sub>e.

The relative financed emissions in tCO<sub>2</sub>e / million euro were calculated by dividing the financed GHG emissions by the outstanding loan volume of the clients for whom a GHG footprint was calculated in this report.

### **Limitations**

When the GHG emissions were taken from the annual reports of the organisations, the calculation method was not completely clear. Therefore, it is not known whether 'Well to Wheel' or 'Tank to Wheel' emission factors were used to calculate the GHG emissions. For this report the 'Tank to Wheel' emission factors were used. When for the GHG emissions in the annual reports, 'Well to Wheel' emission factors were used, the results in current report are slightly overestimated.

Not for all organisations scope 3 GHG emissions were included and for the organisations that had data on scope 3 GHG emissions this was only on business travel.

### **Data quality estimate**

Data quality score is 2. The GHG emissions of energy consumption, fuel consumption and travel kilometres data have been taken from the annual reports

of the organisations themselves. It is not clear whether the data used has been audited, therefore data quality score is 2.

16.3% of the total loan portfolio in other sectors receives a data quality score 2.

### Calculation sheets

The final overview of all the calculations for 2024 can be found in the data file mentioned in the factsheet below.

List of the calculation sheets	Location
251024_Optelling other sectors.xlsx	\Werkmap\Projecten NWB\f3. Berekening NWB

# 14 Total GHG footprint for 2018, 2023 and 2024

## 14.1 Coverage ratio of the GHG emission assessment

In summary, Table 14-1 shows the overview of the outstanding loan volume per sector and subsector and the coverage ratio for 2018, 2023 and 2024.

Table 14-1 Total outstanding loan volume of NWB Bank and part covered in the GHG assessment in 2018, 2023 and 2024<sup>69</sup>

Market segment	Sector	Nace code	Total loan portfolio (million euro)			Coverage ratio by GHG footprint of total loan portfolio (%)		
			2018*	2023 <sup>^</sup>	2024	2018	2023	2024
Social Housing	Social housing associations	6820	30,265	32,591	34,522	97.1	99.7	99.8
Public sector	Municipalities	8410	6,583	5,901	5,764	100.0	100.0	100.0
	Provinces	8410	247	340	317	100.0	100.0	100.0
	Water authorities	8410	6,327	8,370	8,945	100.0	100.0	100.0
	Others	-	16	20	20	-	-	-
Healthcare	Healthcare	8600	2,119	1,925	1,985	89.4	99.3	99.3
Education	Educational institutions	8500	73	79	70	97.1	100.0	100.0
Network & utilities	Drinking water utilities <sup>#</sup>	3600	477	1,214	1,445	-	97.5	98.9
Renewable Energy	Renewable electricity	3500	12	994	1,045	-	88.6	89.0
Financial counterparties	Credit institutions & other financial institutions	6400	116	316	302	-	-	-
	NHG pass-through RMBS	6400	-	2,638	2,864	-	91.8	92.0
Other	Other sectors**	-	1,409	2,502	2,577	-	92.8	91.9
<b>Total</b>	<b>All sectors</b>	-	<b>47,644</b>	<b>56,892</b>	<b>59,855</b>	<b>93.4</b>	<b>98.3</b>	<b>98.4</b>

- means no data are available.

\* The total loan portfolio of 2018 is without NHS pass-through RMBS.

<sup>^</sup> The current report does not include data for 2019, 2020, 2021 and 2022. It is decided to calculate 3 years: The reference year (2018) and the two most recent years, 2023 and 2024.

<sup>69</sup>Reference date for 2024 is 31-12-2024; reference date for 2023 is 31-12-2023 and reference date for 2018 is 31-12-2018.

#For drinking water utilities, the reference year is not 2018, but 2020. Sector specific data are presented in chapter 9.

\*\*Other sectors include credit institutions, other financial institutions, nonfinancial corporates, other public organisations and joint regulations.

Reference date for the year 2024 is 31-12-2024, reference date for the year 2023 is 31-12-2023, and reference date for the year 2018 is 31-12-2018.

For 2024, the financed GHG emission estimates cover 98.4% of NWB Bank loans portfolio. The part of the loan portfolio covered with a calculated GHG footprint has increased compared to 2023 (from 55,902 million euro in 2023 to 58,868 million euro in 2024; Table 14-2).

The calculated GHG footprint is now more complete, but a task remains to improve the data quality in the coming years. Although the coverage ratio for 2024 is 98.4%, not all sectors in Table 14-1 include scopes 1, 2 and 3 emissions. Where scope 3 emissions are included, they are not always complete, for example, in sectors such as healthcare.

## 14.2 Financed GHG emissions of NWB Bank loan portfolio

The calculated GHG footprint results for the total outstanding loans of NWB Bank in 2018, 2023 and 2024 are shown in Table 14-2. Table 14-2 shows that for 98.4% of the loan portfolio, the total financed GHG emissions are 1,494,772 tCO<sub>2</sub>e, the relative financed GHG emissions are 25.4 tCO<sub>2</sub>e per million euro and the overall data quality score is 2.5 on a scale of 1 (best) to 5 (poor).

Table 14-2 Absolute and relative financed GHG emissions in 2018, 2023 and 2024.

Market segment	Sector	Nace codes	Loans of clients for which a GHG footprint was calculated (million euro)			Financed GHG emissions (tCO <sub>2</sub> e)			Relative financed GHG emissions (tCO <sub>2</sub> e/million euro)			Data quality*
			2018	2023 <sup>^</sup>	2024	2018	2023	2024	2018	2023	2024	2024
Housing	Social housing associations*	6820	29,383	32,490	34,438	486,014	318,850	352,202	16.5	9.8	10.2	2.0
Public sector	Municipalities*	8410	6,583	5,901	5,764	212,131	184,898	180,905	32.2	31.3	31.4	3.8
	Provinces	8410	247	340	317	17,483	8,813	10,057	70.9	25.9	31.8	4.0
	Water authorities	8410	6,327	8,370	8,945	762,026	511,903	528,127	120.4	61.2	59.0	2.8
Healthcare	Healthcare*	8600	1,895	1,912	1,973	92,963	62,519	43,212	49.1	32.7	21.9	2.6
Education	Educational institutions	8500	70	79	70	325	1,073	1,056	4.6	13.6	15.1	3.0
Networks & Utilities	Drinking water utilities	3600	-	1,185	1,430	-	34,928	48,223	-	29.5	33.7	2.3
Renewable Energy	Renewable electricity	3500	-	881	931	-	15,160	17,357	-	17.2	18.7	3.0
Financial counterparties	NHG pass-through RMBS	6400	-	2,422	2,633	-	51,618	54,182	-	21.3	20.6	3.0
Other	Other sectors <sup>#</sup>	-	-	2,323	2,368	-	255,360	260,830	-	109.9	110.2	4.5
<b>Total</b>	<b>All Sectors</b>	-	<b>44,505</b>	<b>55,902</b>	<b>58,868</b>	<b>1,570,942</b>	<b>1,445,124</b>	<b>1,496,151</b>	<b>35.3</b>	<b>25.9</b>	<b>25.4</b>	<b>2.5</b>

- means no data are available.

<sup>^</sup> In current report, data of the years 2019, 2020, 2021 and 2022 are not included. It is decided to calculate 3 years: the reference year (2018) and the two most recent years, 2023 and 2024 current report.

\* Weighted average data quality score. More details about the data quality score can be found in the sections Data Quality Estimate of every sector.

<sup>#</sup> Other sectors include credit institutions, other financial institutions, non-financial corporates, other public organisations and joint regulations.

The absolute GHG emissions presented in Table 14-2 depend on the following factors:

- Loan volume
- Coverage ratio
- Completeness of the scopes
- Ratio outstanding loan / total balance sheet (attribution to NWB Bank)
- Emission factors
- Change in methodology that cannot be applied retrospectively
- Absolute GHG emissions of the clients (behaviour/decisions/size of building).

Table 14-1 shows that total loan volume has increased over the years and Table 14-2 shows that the total loan volume with a calculated GHG footprint has increased as well. In comparison to 2023 the coverage ratio has increased. The loan volume with a calculated GHG footprint increased, the financed GHG emissions increased by 51 ktCO<sub>2</sub>e between 2023 and 2024 (Table 14-2). Financed GHG emissions are not directly comparable over time as the coverage ratio increased from 93.4% to 98.4% between 2018 and 2024. Relative financed GHG emissions provide more information. These relative emissions show whether GHG emissions per million euro increase, decrease or remain the same as the coverage ratio increases. Relative financed GHG emissions decreased by 0.4 tCO<sub>2</sub>e per million euro between 2023 and 2024 and by 9.9 tCO<sub>2</sub>e per million euro between 2018 and 2024, which is a reduction of 28.0%. Not all sectors were included in the 2018 calculated GHG footprint, such as drinking water utilities, NHG pass through RMBS and the “other sectors” and therefore the comparison over the years is not entirely fair.

The increase of 51 ktCO<sub>2</sub>e (+3.5%) between 2023 and 2024 is due to an increase in GHG emissions of 63 ktCO<sub>2</sub>e in the sectors of social housing, water authorities and drinking water utilities. The GHG emissions increased by 10 ktCO<sub>2</sub>e for the sectors NHG pass through RMBS, other sectors and renewable electricity. The largest reductions in GHG emissions were seen in the educational institutions and municipalities. For both sectors, the largest reduction was seen in scope 1 (natural gas use).

Per million euro, the “other sectors” and water authorities have the highest relative financed GHG emissions in 2024. Since 2018, the water authorities have shown the largest decrease in these relative GHG emissions. A small share of clients in the “other sector” group has a large GHG footprint. Further research should identify opportune mitigation efforts.

For the four sectors: social housing, municipalities, healthcare and education the financed GHG emissions for scope 1 natural gas consumption and scope 2 electricity consumption per financed m<sup>2</sup> are presented. The educational

institutions sector has the lowest financed GHG emissions per financed m<sup>2</sup> (20.5 kgCO<sub>2</sub>e/m<sup>2</sup>; 2024) and the healthcare institutions have the highest (44.4 kgCO<sub>2</sub>e/m<sup>2</sup>; 2024). For both educational institutions and municipalities, financed GHG emissions per financed m<sup>2</sup> have decreased over time.

NWB Bank aims to significantly reduce its carbon footprint by 2030. The relative emissions (per outstanding balance) for the key sectors of water authorities, drinking water utilities, social housing associations, municipalities and healthcare institutions are to be reduced by 43% compared to the 2018 reference year (2020 reference year for drinking water utilities). Between the reference year and 2024, the relative financed emissions are reduced for most of these sectors.

Although it is not possible to make a fair comparison between years at the level of the total loan portfolio due to differences in coverage ratio, this report shows a decreasing trend in the GHG emissions of NWB Bank's loan portfolio, expressed in tCO<sub>2</sub>e per million euro between 2018 and 2024. NWB Bank's aim is to accelerate this reduction in the coming years. Targets have been set to reduce GHG emissions in the water authorities, drinking water utilities, social housing, municipalities and healthcare sectors. NWB Bank will support this by encouraging its clients to reduce GHG emissions by offering loans linked to sustainable development, among other things. In addition, NWB Bank aims to improve the completeness of the calculated GHG footprint of its loan portfolio each year, ensuring that actions taken in the field are reflected in the footprint.

External factors will always have an impact on GHG emissions. In the last five years, events such as the global pandemic and the conflicts in the world have affected energy prices, energy consumption and travel patterns. Changes in weather conditions, especially in winter, can have an impact on GHG emissions, as colder temperatures often lead to increased heating demand and higher energy consumption. The energy consumption of social housing associations, municipalities, healthcare, and education institutions has been adjusted for weather conditions. In other sectors, however, the figures are not corrected. For instance, rainfall affects the energy use of water authorities, as wetter conditions increase the amount of water that must be treated and pumped, leading to higher energy demand. Long term monitoring of the GHG footprint of the bank's loan portfolio will show whether the reduction is temporary, e.g. due to external factors, or whether it is a long-term positive development due to structural changes in behaviour or investments in sustainable energy sources and/or investments in more sustainable real estate.

## 14.3 Fossil based energy use of NWB Bank loan portfolio

As introduced in section 1.2, NWB Bank monitors the fossil-based energy use of its loan portfolio, as to indicate the portfolio's status in the energy transition towards fossil-free energy. In summary, Table 14-3 shows the fossil-based energy use for heating and electricity and the total fossil-based energy use of the different sectors. Between 2023 and 2024, the total fossil heat consumption increased by 224,050 GJ. Total fossil electricity consumption decreased by 71,627 GJ. This results in an increase in total energy consumption of 152,423 GJ. Heat consumption includes both the non-sustainable part of district heating and natural gas consumption. The total fossil energy consumption has decreased for municipalities, provinces, water authorities and educational institutions between 2023 and 2024. However, the consumption of the sectors social housing associations and drinking water utilities increased, resulting in an overall increase. As explained in chapter 8, the comparison for the healthcare sector cannot be directly made.

**Table 14-3 The heat consumption, electricity consumption and total energy consumption attributed to NWB Bank for 2023 and 2024.**

Market segment	Sector	NACE code	Heat consumption (GJ)		Electricity consumption (GJ)		Total energy consumption (GJ)	
			2023	2024	2023	2024	2023	2024
Social housing	Social housing associations	6820	3,951,829	4,556,352	592,972	597,990	4,544,801	5,154,342
Public sector	Municipalities	8410	391,496	370,976	84,557	85,860	476,053	456,837
	Provinces	8410	2,411	1,603	2,581	2,136	4,992	3,739
	Water authorities	8410	96,830	81,328	417,112	286,466	513,942	444,535
Healthcare	Healthcare	8600	666,886	322,146	90,724	95,202	757,611	417,347
Education	Education	8500	10,470	10,050	2,994	3,079	13,463	13,129
Networks	Drinking water utilities	3600	12,141	13,658	117,954	166,532	130,095	180,190
<b>Total</b>	-	-	<b>5,132,063</b>	<b>5,356,114</b>	<b>1,308,894</b>	<b>1,237,266</b>	<b>6,440,957</b>	<b>6,593,380</b>

- means no data are available.

To calculate the total energy consumption per sector, the consumption of natural gas, electricity and heat has been calculated or taken directly from the available source (e.g. Republiq). The bank's share of the total balance sheet per client is used to determine which part of the energy data NWB Bank is accountable for. If heat is used from a heating network (social housing associations and water authorities)

only the non-sustainable part is shown in this table. For social housing associations, municipalities, provinces, healthcare institutions and education institutions it is not known whether, for example, electricity is purchased as green electricity from the Netherlands. For the calculations in this report, natural gas is assumed to be fossil and for electricity is assumed to be the Dutch energy mix (fossil and renewable).

## Appendix A: Emission factors used per data year

Emission factors used per data year<sup>70</sup>

Source	Unit	Emission factor (kgCO <sub>2</sub> e/unit) (TTW)							
		2017	2018	2019	2020	2021	2022	2023	2024
Petrol (E10) (NL)*	Liter	2.233	2.233	2.233	2.141	2.141	2.141	2.176	2.176
Diesel (B7) (NL)*	Liter	2.514	2.514	2.514	2.474	2.474	2.474	2.468	2.468
LPG (NL)	Liter	1.61	1.61	1.61	1.61	1.631	1.631	1.635	1.635
Bio-diesel (HVO)^	Liter	-	-	-	-	-	0.038	0.032	0.032
Bio-diesel (FAME)	Liter	-	-	-	-	0,035	0.035	0.031	0.031
CNG	Liter	2.234	2.234	2.234	2.234	2.284	2.284	2.255	2.255
Bio-CNG^	Liter	-	-	-	-	-	0.137	0.112	0.112
Gas-to-liqui	Liter	-	-	-	-	2.471	2.471	2.465	2.465
Propane	Liter	-	-	-	-	1.53	1.53	1.53	1.53
Fuel oil**	Liter	3.185 (WTW)	3.185 (WTW)	3.185 (WTW)	3.185 (WTW)	3.185 (WTW)	3.185 (WTW)	2.468 (TTW)	2.468 (TTW)
Natural gas	Nm <sup>3</sup>	1.791	1.791	1.791	1.785	1.785	1.788	1.782	1.779
Grey energy	kWh	0.464	0.572	0.572	0.476	0.476	0.454	0.396	0.448
Grey energy (WTW)	kWh	0.526	0.649	0.649	0.556	0.556	0.523	0.456	0.536
Electricity from unknown sources (kWh) <sup>##</sup>	kWh	-	-	-	0.405	0.405	0.369	0.290	0.270
Electricity (Wind Power/Hydropower/Solar Energy/Biomass)	kWh	0	0	0	0	0	0	0	0
Car, unknown fuel & weight	Vehicle km	0.181	0.181	0.181	0.163	0.163	0.145	0.145	0.145
Car, Petrol & weight class middle	Vehicle km	-	-	-	-	-	-	-	0.157
Car, Diesel & weight class middle	Vehicle km	-	-	-	-	-	-	-	0.136
Car, LPG & weight class middle	Vehicle km	-	-	-	-	-	-	-	0.138
Car, electric	Vehicle km	0	0	0	0	0	0	0	0
Car, petrol hybrid	Vehicle km	-	-	-	-	-	-	-	0.111
Minibus, petrol	Vehicle km	-	-	-	-	-	-	-	0.218

<sup>70</sup> Emission factors are sourced from [Co2emissiefactoren.nl](https://www.co2emissiefactoren.nl). Data for different years can be found [here](#).

Source	Unit	Emission factor (kgCO <sub>2</sub> e/unit) (TTW)							
		2017	2018	2019	2020	2021	2022	2023	2024
Public transport in general (traveled kms; type of transport unknown)	Traveler km	0.025	0.025	0.025	0.025	0.011	0.011	0.016	0.016
Public transport in general (traveled kms; Bus, Tram, Metro average) <sup>^^</sup>	Traveler km	-	-	-	-	0.052	0.052	0.059	0.059
Public transport by train (traveled kms; unknown train type)	Traveler km	0.005	0.005	0.005	0.005	0.002	0.002	0.002	0.002
Public transport by bus (traveled kms; type unknown) <sup>***</sup>	Traveler km	0.113	0.113	0.113	0.113	0.081	0.081	0.086	0.086
Public transport by tram (traveled kms)	Traveler km	0	0	0	0	0	0	0	0
Public transport by metro (traveled kms)	Traveler km	0	0	0	0	0	0	0	0
Air travel <700 km	Traveler km	0.278	0.278	0.278	0.278	0.278	0.202	0.202	0.202
Air travel 700-2500 km	Traveler km	0.187	0.187	0.187	0.187	0.187	0.152	0.152	0.152
Air travel >2500 km	Traveler km	0.137	0.137	0.137	0.137	0.137	0.140	0.140	0.140
Air travel, average km	Traveler km	-	-	-	-	-	0.160	0.160	0.160
Motor	Traveler km	-	-	-	-	-	-	0.113	0.113
Moped	Traveler km	-	-	-	-	-	-	-	0.064
Bicycle	Traveler km	0,000	0,000	0.000	0.000	0.000	0.000	0.000	0.000
Bulk goods, Truck, unit with semi-trailer heavy	Tonne km	0.064	0.064	0.064	0.064	0.067	0.067	0.067	0.067
Average heating networks <sup>*#</sup>	GJ	-	-	-	-	-	23.4	21.93	21.61
Methane <sup>**</sup>	Kg	-	-	-	-	28 (WTW)	28 (WTW)	28 (WTW)	28 (WTW)
Nitrous oxide	Kg	-	-	-	-	265 (WTW)	265 (WTW)	265 (WTW)	265 (WTW)
Pellets from (dry) industrial waste stream (NL)/Pellets from fresh wood (NL)	Kg dry matter	-	-	0.006	0.006	0.006	0.006	0.006	0.006
Refrigerant R407c	Kg	-	-	-	-	-	-	-	1,624 (WTW)
Refrigerant R404a	Kg	-	-	-	-	-	-	-	3,943 (WTW)

Source	Unit	Emission factor (kgCO <sub>2</sub> e/unit) (TTW)							
		2017	2018	2019	2020	2021	2022	2023	2024
Refrigerant R507	Kg	-	-	-	-	-	-	-	3,985 (WTW)
Refrigerant R410a	Kg	-	-	-	-	-	-	-	1,924 (WTW)
Refrigerant R449A	Kg	-	-	-	-	-	-	-	1,282 (WTW)
Refrigerant R448A	Kg	-	-	-	-	-	-	-	1,273 (WTW)
Refrigerant R744	Kg	-	-	-	-	-	-	-	1 (WTW)
Refrigerant R134A	Kg	-	-	-	-	-	-	-	1,300 (WTW)
Refrigerant R32	Kg	-	-	-	-	-	-	-	677 (WTW)
Sulphur hexafluoride	Kg	-	-	-	-	-	-	-	23,500 (WTW)

- means no data are available.

\* There are different types of petrol and diesel in the list from CO<sub>2</sub>emissiefactoren.nl. It is advised by CO<sub>2</sub>emissiefactoren.nl to use these values (see [CO<sub>2</sub>emissiefactoren.nl](#) 2023, comments at Benzine).

^ Values before 2021 were indicative. Advised by [CO<sub>2</sub>emissiefactoren.nl](#) to use values of the year 2022 for previous years.

\*\* Use of emission factors according to data year. For 2023, [CO<sub>2</sub>emissiefactoren.nl](#) recommends using the emission factor for diesel instead of the emission factor for fuel oil.

## Advised by [CO<sub>2</sub>emissiefactoren.nl](#) to use values of the year 2020 and 2021 for previous years.

^^ Use of emission factors according to data year. For 2018 the emission factors of 2021 and 2022 have been used.

\*\*\* Use of emission factors according to data year. [CO<sub>2</sub>emissiefactoren.nl](#) reports that for the years 2021 and 2022 TTW is not available. TTW for 2021 and 2022 have been calculated based on that TTW is 78.9% of WTW.

\*# The value for 2022 and 2023 is the average factor for heat from large heating networks. In current report, the 2022 emission factor has been used for all years before 2022 due to large differences between the 2022 emission factor and previous years. From 2023 onwards, for some social housing associations the emission factor of specific district heating networks has been used. The emission factors can be found in Appendix B.

\*^ Since 2021, the value for methane has been published by [CO<sub>2</sub>emissiefactoren.nl](#). This value is also applicable for earlier years.

## Appendix B: Emission factors heat networks

The specific emission factors for the large and medium heat networks for 2022 (used for 2023) and 2023 (used for 2024).

Supplier	Heat network	GHG emissions (kgCO <sub>2</sub> e/GJ <sup>th</sup> )	
		2022	2023
Eneco	Utrecht - Nieuwegein	21.43	26.0
Ennatuurlijk	Enschede	8.54	5.6
Ennatuurlijk	Eindhoven Strijp	35.8	21.93
Ennatuurlijk	Midden- en West-Brabant	15.55	32.8
Ennatuurlijk	Helmond	87.02	106.1
HVC	Dordrecht	11.52	9.6
HVC	Regio Alkmaar	9.23	9.7
Eneco	Rotterdam	23.4	37.4
Vattenfall	Leiden	23.4	46.3
SVP	Purmerend	26.49	49.1
Vattenfall	Almere	23.49	20.5
Vattenfall	Duiven/Westervoort	12.07	12.4
Vattenfall	Arnhem	13.06	21.93
Vattenfall	Lelystad	21.24	8.4
Vattenfall	Nijmegen Waalsprong	14.04	19.6

