stichting W/E adviseurs

W/E report 33130

CO2 impact of NIBC green bond eligible assets

Status per 31-12-2025

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Content

1 NIBC Green Bond

As requested by NIBC, W/E consultants have calculated the CO_2 impact indication of the assets which are eligible for NIBC green bonds as per 31 December 2025. This report covers the impact calculations of the current eligible assets for NIBC green bonds. The Green Bond itself consists of the following codes: ISIN XS2384734542 (750 million euros) and ISIN XS3087726595 (500 million euros).

In this report the carbon impact is calculated per eligible asset category, depending on the distribution of allocated assets per 31 December 2025. In 2025, only mortgages for residential buildings were part of the assets. Core indicators are reported in accordance with 'The Global GHG Accounting and Reporting Standard for the Financial Industry' of PCAF, which was updated in 2022[1]. In 2025, the third edition was presented[2]. Compared to the second edition in 2022, no differences in the calculation method were identified for the purpose of this report.

The method for calculating the avoided CO_2 emissions is described in chapter 2. The calculated CO_2 emissions attributed to the NIBC green bond eligible assets per use function (in Dutch: gebruiksfunctie) can be found in chapter 3. The benchmark CO_2 emissions are calculated and compared to the CO_2 emissions of the NIBC eligible assets in chapter 4. The PCAF CO_2 coefficients and the distribution of the m^2 useful floor area of the average buildings in the Netherlands can be found in chapter 5, the Annex.

The calculated total financed CO_2 emission reduction attributed to the 1,250 million euro NIBC Green Bond compared to the benchmark is 3,097 tonnes CO_2 per year (-24.9%, please refer to Table 2).

1.1 Characteristics NIBC green bond eligible assets

The first table shows an overview of the assets that are part of the green bond eligible assets. Please note that the total value ('current loan') of all assets equals 1,376 million euro, whereas the Green Bond itself has a value of 1,250 million euro.

Table 1 Data NIBC eligible assets per use function[3].

Use function	number of property units[4]	useful floor area [m^2]	property value [€]	current loan [€]
Residential	3,998	563,605	2,115,997,919	1,376,176,163
TOTAL	**3,998**	**563,605**	**2,115,997,919**	**1,376,176,163**

1.2 Total (financed) CO_2 emission NIBC green bond eligible assets

The proceeds of the current green bond eligible assets are allocated to the retail mortgages project categories of NIBC. For each of these categories (this year: only residential mortgages), the annual avoided CO_2 emissions (compared to a national benchmark) have been calculated (Table 2). The table shows 3 sets of data:

1. The total emission and emission reduction of all eligible assets;
2. As 1., but only the part that is financed by NIBC;

[1] PCAF (2022). 'The Global GHG Accounting and Reporting Standard Part A. Financed Emissions. Second edition.' 'PCAF-Global-GHG-Standard.pdf', December 2022, https://carbonaccountingfinancials.com/standard

[2] PCAF (2025). The Global GHG Accounting and Reporting Standard Part A: Financed Emissions. Third Edition.

[3] NIBC provided data in a spreadsheet: '2025Q4 NIBC retail mortgages selection for green bond.xlsx'.

[4] In Dutch: "verblijfsobject"

3. As 2., but only the part that is used to cover the Green Bond (i.e., 1,250/1,376 times the emission and emission reduction in 2.).

Table 2 CO_2 emissions of all eligible assets and of Green Bond compared to benchmark[5].

	NIBC [tonnes/a]	Benchmark [tonnes/a]	Reduction [tonnes/a]	Reduction [%]
1. CO_2 emission	15,857	21,024	-5,167	-24.6%
2. Financed CO_2 emission all assets	10,260	13,670	-3,409	-24.9%
3. Financed CO_2 emission attributed to NIBC Green Bond	9,320	12,416	-3,097	-24.9%

[5] In this report, we use metric tonnes (1,000 kilograms).

2 Calculation method CO_2 emissions

The method for calculating the financed CO_2 emissions is derived from chapters '5.4 Commercial real estate' and '5.5 mortgages' of the PCAF publication.

The following calculations are made:

- The CO_2 emissions of the buildings that are part of the NIBC green bond eligible assets.
- The financed CO_2 emissions of these buildings. This is the calculated CO_2 emission per building multiplied by the attribution factor.
- Avoided emissions: The comparison of these (financed) CO_2 emissions to a relevant benchmark, in this case, the average CO_2 emissions of a comparable set of buildings in the Netherlands.

The annual CO_2 emissions are calculated using CO_2 coefficients per use function per energy label G-A^{++++} (tonnes/m^2.a; see Table 8 in the Annex, taken from the PCAF database[6]) and the relevant data for all eligible assets: use function (office, shop, dwelling, etc.), useful floor area [m^2] and the energy label. The emission factors in the PCAF database reflect the CRREM global pathways and the change in the methodology to determine the energy consumption in the Dutch energy label system (based on the NTA 8800:2022[7]). See formula [1] in the Annex.

The financed CO_2 emissions, as calculated according to formula [3] in the Annex, include the attribution factor in the calculations. The attribution factor is the ratio between the outstanding loan amount and the property value at origination, as calculated in formula [2] in the Annex. Per building the calculated CO_2 emisison is multiplied by the attribution factor of that building.

To compare the calculated CO_2 emissions to a benchmark, an average CO_2 coefficient [tonnes/m^2.a] per use function is calculated, using the distribution of energy labels of all registered residential dwellings and utility buildings in the Netherlands as derived from the Dutch energy label database EP-online[8].

The calculations of the (financed) CO_2 emission reduction of the NIBC green bond eligible assets compared to the benchmark are made per building and then summed up per use function and then to a total.

2.1 Step-by-step

Calculations are made per building and then summed per use function and then total.

1. Collect the following data for all NIBC green bond eligible assets:
   - Use function
   - Current loan amount [euro]
   - Loan amount at origination [euro]
   - % NIBC financing [%]
   - Energy label
   - Useful floor area according to BAG [m^2]
2. Collect the CO_2 coefficients per m^2 useful floor area, per energy label from the PCAF website.
3. Use data from the first steps and the formulas of paragraph 5.3 in the Annex to calculate the CO_2 emission of all eligible assets (results in chapter 3).

[6] PCAF: Enabling financial institutions to assess greenhouse gas emissions | PCAF (carbonaccountingfinancials.com)

[7] NTA 8800 https://www.nen.nl/nta-8800-2022-nl-290717

[8] EP-online database March 2026: https://www.ep-online.nl/PublicData

4. Calculate the average CO_2 coefficient [tonnes/m^2.a] per use function in the Netherlands using the average distribution of the m^2 useful floor area per energy label in the Netherlands and the PCAF CO_2 coefficients per use function and energy label. The average distribution of useful floor area over the energy labels comes from the total of registered energy labels (residential dwellings and other use functions).
5. Calculate the benchmark CO_2 emission per building, using the useful floor area of the building and the calculated average CO_2 coefficient for the corresponding use function. See paragraph 4.
6. Sum up all the calculated (financed) CO_2 emissions per building to the CO_2 emissions per use function and the total CO_2 emission.
7. The reduction is calculated to subtract the CO_2 emissions for the NIBC green bond eligible assets from the CO_2 emissions of the average building set.

3 CO_2 emissions – NIBC eligible assets

The CO_2 emissions of dwellings are determined based on data of single family dwellings and residential buildings provided in the spreadsheet '2025Q4 NIBC retail mortgages selection for green bond.xlsx'.

3.1 Energy label distribution

The distribution of useful floor area per use function and per energy label.

Table 3 Useful floor area per use function and per energy label [m^2]

Use function	A++++	A+++	A++	A+	A	Total
Residential buildings	518	2,637	1,706	5,562	62,490	72,913
Single family dwellings	11,737	21,116	11,995	23,070	422,774	490,692
TOTAL	**12,255**	**23,753**	**13,701**	**28,632**	**485,264**	**563,605**

3.2 CO_2 emissions NIBC eligible assets

To calculate the CO_2 emissions of all buildings within the NIBC green bond eligible assets, the data from Table 3 (useful floor area in m^2) and Table 8 (CO_2 coefficient in tonnes/m^2.a) are combined. The results are given per energy label and use function to be able to follow the calculation.

Table 4 CO_2 emission of all buildings within NIBC eligible assets [tonnes/a]

Use function	A++++	A+++	A++	A+	A	Total
Residential buildings	0.0	15.6	25.1	117.9	1,943.4	2,102.0
Single family dwellings	0.0	122.5	173.9	479.9	12,979.2	13,755.4
TOTAL	**0.0**	**138.0**	**199.0**	**597.8**	**14,922.6**	**15,857.4**

3.3 CO_2 emissions of financed part NIBC eligible assets

Table 5 CO_2 emission of financed part of all buildings within NIBC eligible assets [tonnes/a]

Use function	A++++	A+++	A++	A+	A	Total
Residential buildings	0.0	10.0	18.9	78.1	1,163.1	1,270.0
Single family dwellings	0.0	83.2	116.7	330.1	8,460.3	8,990.2
TOTAL	**0.0**	**93.1**	**135.5**	**408.2**	**9,623.3**	**10,260.2**

4 CO_2 emissions – Benchmark

The CO_2 emissions of the buildings in the NIBC green bond eligible assets are compared to the benchmark: the average CO_2 emissions of buildings in the Netherlands. Calculations are made per building and then summed per use function and then for all buildings.

The basic principle of calculating the average CO_2 emissions is the same as used for the eligible assets (formula [1] in the Annex). The deciding parameters are the distribution of useful floor area of Dutch buildings per use function over the energy labels and the CO_2 coefficients per use function and energy label in the PCAF data. The difference between the distribution of useful floor area of the NIBC green bond eligible assets compared to the average distribution in the Netherlands. In the Annex data are given of the distribution of useful floor area and the average CO_2 coefficients per use function (see Table 9 and Table 10 in the Annex). See paragraph 4.1.

For comparing the financed CO_2 emissions of the NIBC green bond eligible assets, the calculated 'average' CO_2 emission per building is multiplied by the attribution factor for that building (formulas [1], [3]).

4.1 CO_2 emissions NIBC and Benchmark NL

Table 6 CO_2 emission of the NIBC eligible assets (calculated with actual energy labels) compared to an equivalent building stock (calculated with average CO_2 coefficients for Dutch buildings).

Use function	Benchmark CO_2 emission [tonnes/a]	NIBC CO_2 emission [tonnes/a]	Reduction CO_2 emission [tonnes/a]
Residential buildings	2,631.5	2,102.0	-529.5
Single family dwellings	18,392.6	13,755.4	-4,637.2
TOTAL	**21,024.1**	**15,857.4**	**-5,166.7**

4.2 Financed CO_2 emission reduction

Table 7 CO_2 emission of the financed part of the NIBC green bond eligible assets (calculated with actual energy labels) compared to an equivalent building stock (calculated with average CO_2 coefficients for Dutch buildings).

Use function	Benchmark CO_2 emission [tonnes/a]	NIBC CO_2 emission [tonnes/a]	Reduction CO_2 emission [tonnes/a]	[%]
Residential buildings	1,601.2	1,270.0	-331.2	-20.7%
Single family dwellings	12,068.4	8,990.2	-3,078.1	-25.5%
TOTAL	**13,669.5**	**10,260.2**	**-3,409.3**	**-24.9%**

5 Annex

5.1 CO_2 coefficients PCAF

PCAF has CO_2 emissions available for several commercial real estate classes (use function) per energy label. Coefficients for residential buildings and single family dwellings are given in Table 8.

Table 8 CO_2 coefficients on PCAF website (consulted in March 2026) [tonnes $CO_2/m^2.a$]

CRE	A++++	A+++	A++	A+	A	B	C	D	E	F	G
Residential buildings	0.000	0.006	0.015	0.021	0.031	0.041	0.052	0.064	0.073	0.084	0.095
Single family dwelling	0.000	0.006	0.015	0.021	0.031	0.041	0.051	0.063	0.072	0.083	0.093

5.2 Distribution m^2 useful floor area over energy labels & CO_2 coefficients NL

Table 9 The current distribution of m^2 useful floor area per use function over the energy labels in the Netherlands [% per use function]. Sources are the EP-online database for registered energy labels (single family dwellings and residential buildings, database per March, 2026).

CRE	A+++ +	A+++	A++	A+	A	B	C	D	E	F	G
Residential buildings	0.61%	5.78%	5.41%	10.36%	30.59%	14.85%	18.76%	6.27%	3.53%	1.87%	1.96%
Single family dwelling	3.24%	7.86%	3.63%	6.67%	24.86%	16.24%	21.24%	7.13%	4.41%	2.43%	2.29%

Table 10 Average CO_2 emission per use function [tonnes/m^2.a]

Use function	CO_2 emission [tonnes/m^2.a]
Residential buildings	0.0386
Single family dwelling	0.0392

5.3 Formulas

The following formulas are used to calculate the CO_2 emission of the buildings of the NIBC green bond eligible assets. All calculations have been done per building. Summed results per use function (and when necessary per energy label) are presented in the report.

[1] CO_2 emission = CO_2 coefficient PCAF * useful floor area
> CO_2 emission [tonnes CO_2/a]
> CO_2 coefficient PCAF, as given in Table 8 in the Annex [tonnes CO_2/m^2.a]
> useful floor area, as given in the NIBC datasheet [m^2]

[2] Attribution factor = outstanding amount / property value at origination
> attribution factor, ratio between outstanding amount and property value at origination [-]
> outstanding amount, as is found in the NIBC data under 'current loan amount' [€]
> property value at origination, as can be calculated with the NIBC data:
= 'loan amount at origination' / '% NIBC financing' [€]

[3] Financed CO_2 emission = CO_2 emission * attribution factor
> Financed CO_2 emission, as the main result of the calculation [tonnes CO_2/a]