

Impact Assessment Eligible Green Loan Portfolio ASN Bank N.V.

Project: 2025 Impact Assessment
Green Eligible Loan Portfolio ASN
Bank

Subject: Reduced CO₂-emission
calculation

Date: 12-6-2026

Status: Final

CFP Green Buildings has been asked to compare the greenhouse gas emissions¹ of a specific, energy-efficient group of residential real estate (in this document indicated as Eligible Green Loan Portfolio^{2,3}) to that of a comparable group of residential real estate with an average energy efficiency (indicated as “Reference” or “Reference Group”). The objective of this analysis is to demonstrate that the selected buildings belong to the topmost sustainable buildings in the Netherlands.

In this document, the results of this analysis are shown. The Eligible Green Loan Portfolio of ASN Bank complies with the technical screening criteria of the EU Taxonomy Delegated Regulation from June 2021. This document outlines the results of this analysis.

The Eligible Green Loan Portfolio

A total of 40,885 assets have been selected as eligible for the ASN Bank Eligible Green Loan Portfolio. The assets either have a registered energy label A, belong to the top 15% of the national building stock expressed as

operational Primary Energy Demand (PED)⁵, as required by the EU taxonomy or meet the requirements for a PED lower than 10% threshold set for a Nearly Zero Energy Building (NZEB).

The selection of eligible assets was based on asset-level data provided by ASN Bank. Based on this eligible asset pool, CFP conducted the impact analysis and determined the energy consumption and benchmark values used in this report.

For the selection of the top 15%, the year that a new building code was introduced is used as a criterion, as described in the Green Residential Buildings Methodology Assessment Document of February 2024⁴. This is because the Dutch Building Regulation sets out energy efficiency requirements for different building types. For example, the Dutch Building Code 2000 requires an EPC score of at least 1.0. Over time the Dutch Building Regulation becomes more stringent regarding energy-efficiency and sustainability requirements for new buildings. The year a new building code was introduced and therefore used as a selection criterion for the top 15% is 2006. At the time the methodology report was published, approximately 12.28% of the Dutch housing stock were residential buildings built between 2006 and year-end 2020. This way, the buildings in ASN Bank’s Eligible Green Asset Portfolio belong to the top 15% of most energy-

¹ Greenhouse gas emissions are calculated in CO₂-equivalent, which will be referred to as CO₂ throughout this document.

² When referring to the Eligible Green Loan Portfolio in this document, we refer to Dutch Residential Green Buildings only.

³ The Eligible Green Loan Portfolio consists of 40,885 assets.

⁴ Source: [Green Bonds | Corporate ASN Bank](#)

efficient buildings of the Dutch residential real estate market.

For buildings constructed after 31 December 2020, the portfolio achieves an energy performance that is 10% more efficient than the NZEB requirements, in accordance with the following values:

- Ground based houses (such as houses and (semi)-detached houses): Equal to or lower than 27 kWh/m²/year.
- Non-ground based buildings (such as flats and apartments): Equal to or lower than 45 kWh/m²/year.

Methodology

CO₂-emissions in this study are calculated by converting energy consumption into emissions using standard conversion factors. The Dutch government provides a widely accepted and uniform set of grid emission factors (www.co2emissiefactoren.nl), which are applied in this analysis.

The emission factors used are based on direct emissions, also referred to as Tank-To-Wheel (TTW), in line with the generally accepted PCAF methodology⁷. Where the origin of electricity is unknown, the emission factor for electricity from an undefined energy source is applied. These factors are regularly updated to reflect changes in the Dutch energy mix.

The following emission factors have been used:

Applied CO₂-emission factors

Natural gas ⁵	1.779	kg CO ₂ /m ³
Electricity ⁶	0.220	kg CO ₂ /kWh

Table 1: Dutch CO₂-emission factors⁷

⁵ Source: <https://www.co2emissiefactoren.nl> using TTW emissions.

⁶ Source: <https://www.cbs.nl/nl-nl/achtergrond/2024/51/trendeminten-en-co2-emissie-van-elektriciteitsproductie-in-nederland-update-2023> as selected by ASN Bank N.V. to align with their annual report.

The CO₂-emissions of the 40,885 eligible assets selected by ASN Bank are determined based on their calculated energy consumption.

The energy consumption is based on algorithms and benchmarks from the expert system of CFP Green Buildings. CFP's Expert system is a database consisting of actual energy data of buildings. A section of this anonymised data provides live energy data derived from CFP's Energy Monitoring projects. Moreover, public big data, for example yearly updated average energy usage of homes in the Netherlands provided by Statistics Netherlands (CBS), is used to improve and check the benchmarking model. CFP green buildings continuously improves its calculation methods and algorithms when new data or insights become available.

In this reporting cycle, the methodology used to calculate the gas consumption has been further refined. As a result, reported energy consumption and associated emissions may differ from previous reporting periods, reflecting a more accurate representation of actual building performance.

To ensure robust benchmarking, a Reference Group has been established based on data from CBS, RVO, Kadaster, and CFP Green Buildings⁹. These sources provide average energy consumption and associated CO₂-emissions per square meter for different building types in the Netherlands. The data is updated regularly to ensure alignment with the latest available insights.

The following energy consumption and CO₂ emissions have been applied for the reference group in this report⁸:

⁷ The emission factors of 2025 are used, since the portfolio emissions are also determined for the year 2025.

⁸ The emission factors of table 1 are used.

Reference Group per m²

Electricity consumption	31.6	kWh
Gas consumption	100.7	kWh
CO ₂ -emission	25.3	kg CO ₂

Table 2: Emission of the Reference Group

The Reference Group represents the Dutch residential building stock and is dynamic in nature. Over time, it becomes more sustainable due to ongoing renovations and the addition of new buildings that comply with increasingly stringent regulatory standards.

The calculated energy consumption is converted into CO₂-emissions using the emission factors described above. This approach ensures consistency with national standards and international methodologies such as PCAF.

Table 3 presents the distribution of assets within the ASN Bank Eligible Green Loan Portfolio across the following eligibility criteria:

1. Residential buildings with an A-label constructed before 2021
2. Buildings built between 2006 and 2020 that fall within the top 15% of the national building stock, as defined in the Green Residential Buildings Methodology Assessment Document of February 2024⁹
3. Buildings constructed from 2021 onwards that achieve a PED at least 10% lower than NZEB requirements

Criteria	Assets
<i>Buildings with an A-label built before 2021</i>	29,358
<i>Buildings built between 2006-2020 (Top 15%)</i>	8,347
<i>Buildings built since 2021 with PED of NZEB -10%</i>	3,180

Table 3: Assets in the Eligible Green Loan Portfolio

⁹ Source: verslag_volksbank_2024_v2.indd (devolksbank.nl).

Energy consumption

Table 4 shows the calculated energy consumption per year of the Eligible Green Loan Portfolio. PED differs from energy consumption as it represents a theoretical value, calculated within the energy label methodology. Energy consumption, as used in this report, reflects a benchmark of the actual energy usage of the asset and is a proxy for PED. An EP2 indicator (PED) is not available for all assets, as not all energy labels are based on the NTA 8800 methodology, and the top 15% category in the portfolio does not have an energy label. Older energy labels issued under

methodologies other than NTA 8800, as well as buildings without an energy label, do not include a PED value.

The calculated annual energy consumption is 169.7 million kWh of electricity and 28.1 million m³ of natural gas. To calculate the total energy consumption in kWh, the natural gas consumption in m³ needs to be converted to kWh¹⁰, giving a consumption of 47.1 kWh per m². The total calculated energy consumption is 76.2 kWh per m².

	Electricity consumption		Natural gas consumption		
	(x1000 kWh)	(kWh/m ²)	(x1000 m ³)	(m ³ /m ²)	(kWh/m ²)
<i>Buildings with an A-label built before 2021</i>	118,741	29.0	20,062	4.9	47.8
<i>Buildings built between 2006-2020 (Top 15%)¹¹</i>	35,497	26.9	8,067	6.1	59.8
<i>Buildings built since 2021 with PED of NZEB -10%</i>	15,485	37.6	0	0	0
<i>Total Eligible Green Loan portfolio</i>	169,723	29.1	28,129	4.8	47.1

Table 4: Calculated energy consumption Eligible Green Loan Portfolio

¹⁰ Conversion factor for natural gas: 1 m³ = 9.769 kWh.

¹¹ Buildings without a registered energy label.

CO₂-emissions

Table 5 shows the CO₂-emissions of the Eligible Green Loan Portfolio and the Reference Group, based on the calculated energy consumption. The total CO₂-emissions of the Eligible Green Loan Portfolio is 87,381 tonnes per year, while the annual CO₂-emissions for the Reference

Group is 147,419 tonnes. The emissions of the Reference Group are determined based on the CO₂-emissions shown in table 2. Thus, the buildings are estimated to emit 60,038 tonnes per year less than the Reference Group, which is a reduction of 41%.

	#	m ²	CO ₂ -emissions Eligible Green Loan Portfolio in tonnes	CO ₂ -emissions reference in tonnes	CO ₂ -emissions reduction in tonnes
<i>Buildings with an A-label built before 2021</i>	29,358	4,099,822	61,813	103,684	41,871
<i>Buildings built between 2006-2020 (Top 15%)</i>	8,347	1,317,581	22,161	33,322	11,161
<i>Buildings built since 2021 with PED of NZEB -10%</i>	3,180	411,727	3,407	10,413	7,006
<i>Total Eligible Green Loan portfolio</i>	40,885	5,829,130	87,381	147,419	60,038

Table 5: CO₂-emission Eligible Green Loan Portfolio compared to the Reference Group

Annual development of climate impact

CFP Green Buildings also gave insights into the energy consumption of the Eligible Green Loan Portfolio as of year-end 2024 and compared the CO₂-emissions of the Eligible Green Loan Portfolio. Figure 1 shows the electricity and gas consumption per m² of the Eligible Green Loan Portfolio in 2024 and 2025. The electricity consumption per m² has increased slightly over the last year due to the

introduction of the NZEB -10% buildings in the portfolio. The gas reduction per m² has decreased. This is partly due to the new gas consumption calculation method we introduced this year and partly driven by the inclusion of NZEB -10% buildings in the portfolio.

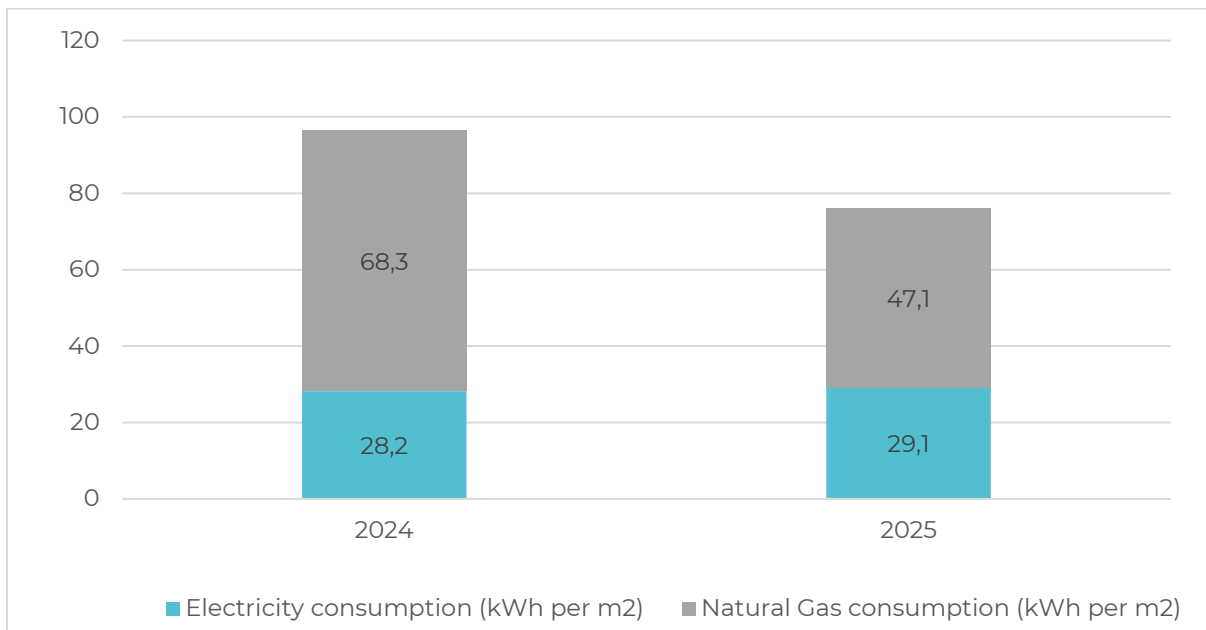


Figure 1: Calculated energy consumption comparison per m² Eligible Green Loan Portfolio

Figure 2 gives insights on the CO₂-emissions per m² of the Eligible Green Loan Portfolio in 2024 and 2025. The total energy consumption is converted to CO₂-emission by using the standard conversion factors. The CO₂-emissions are calculated over the entire portfolio, divided by the total amount of square

meters. This graph shows that the CO₂-emissions per m² of the Eligible Green Loan Portfolio have decreased over the last year, from 18.7 kg CO₂/m² to 15.0 kg CO₂/m². The reduced emissions per m² have increased from 8.5 kg CO₂/m² in 2024 to 10.3 kg CO₂/m² in 2025.

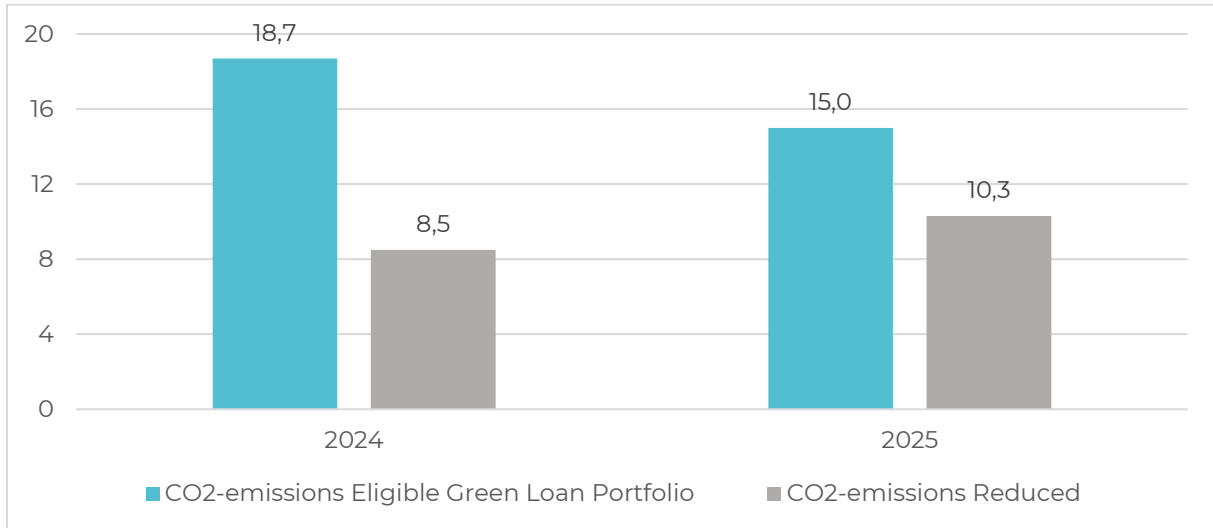


Figure 2: CO₂-emissions of the Eligible Green Loan Portfolio and CO₂-emissions reduced in 2024 and 2025

Conclusion

The following conclusions are drawn from this study:

- The buildings in the Eligible Green Loan Portfolio are estimated to emit 60,038 tonnes of CO₂ per year less than the Reference Group, which is a reduction of 41%.
- The total average estimated energy consumption is calculated at 76.2 kWh /m² ¹².
- All buildings in the Eligible Green Loan Portfolio align with the substantial

contribution to climate change mitigation following the EU Taxonomy definition, either by having an EPC class A rating or higher, by belonging to the top 15% of the national building stock expressed as operational PED or by meeting the EU taxonomy criterion for new buildings constructed since 2021 with a PED at least 10% below the NZEB threshold.

¹² The total average estimated energy consumption is not only based on primary energy demand of the building, but also on the estimated actual usage.