Green Bond Impact Report

Nationale-Nederlanden Bank N.V.

Financial Year 2022

NN Bank Green Bond Impact Reporting

31 December 2022

Metrics regarding projects' environmental impacts:

Portfolio based green bond report in accordance with the ICMA Handbook - Harmonized Framework for Impact Reporting (December 2020)[1]. Calculation of CO2-emissions are in line with the recommendations of the Partnership for Carbon Accounting Financials (PCAF).

Eligible Project Category	SBP/GBP	Number of units	Eligible portfolio (EURm)	Share of Total Financing	Eligibility for Green Bonds	Annual energy consumption (KWh/m2)	Annual reduced and/or avoided emissions of CO2 (tons)
a/	b/		c/	d/	e/	f/	f/
Green Buildings	GBP	14,661	4,277	100%	100%	94.8	24,512
Total			**4,277**	**100%**	**100%**	**94.8**	**24,512**

a/ Eligible category

b/ Whether bond falls under social or green bond principles

c/ Signed/budgeted amount committed by the issuer for the portfolio or portfolio components eligible for Green Bond financing

d/ This is the share of the total budget financing

e/ This the share of the total portfolio costs that is Green Bond Eligible

f/ Impact indicators

EU Taxonomy Alignment summary

Summary of Eligible Green Loans selected	New and existing mortgages for energy efficient residential buildings in the Netherlands aligned with section 7.7 of the Climate Delegated Act
Alignment with EU Taxonomy Technical Screening Criteria for substantial contribution (Climate Delegated Acts)	100%
Do No Significant Harm & Social Safeguards	NN Bank will ensure on a best efforts basis that all selected Eligible Green Loans comply with official national and international standards and local laws and regulations on a best effort basis. It is part of the transaction approval process of NN Bank to ensure that all activities comply with internal environmental and social standards

[1] https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Handbook-Harmonized-Framework-for-Impact-Reporting-December-2020-151220.pdf

nationale nederlanden

Impact assessment Eligible Green Loan Portfolio NN Bank

Project: Impact Assessment Eligible Green Loan Portfolio NN Bank

Subject: Avoided CO_2-emission calculation

Date: April 2023

Status: Final

CFP Green Buildings has been asked to compare the greenhouse gas emissions[1] 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"[4]). The objective of this analysis is to report the positive impact of the sustainable residential real estate of NN Bank. The sustainable residential real estate of NN Bank complies with the criteria of the EU Taxonomy Delegated Regulation from June 2021. This document outlines the results of this analysis.

Preface

Nationale-Nederlanden Bank N.V. ("NN Bank") is a 100 per cent subsidiary of NN Group and is a Dutch retail bank, offering various banking products and services to private individuals. Core products are mortgages, savings and investments.

NN Group N.V. ("NN Group" or "the Group") is a financial services company, operating in 11 countries with a strong presence in Europe and Japan. NN Group has approximately 20 million customers, is listed on Euronext Amsterdam and employs more than 16,000 people.

Climate change represents an urgent and potentially irreversible threat to livelihoods and the well-being of society. To mitigate the worst effects, we must transition to a low-carbon economy, limiting the global temperature to 1.5°C as part of the 2015 Paris Agreement. The latest science shows that emissions will need to reach net-zero around 2050 to meet this goal and prevent the worst impacts of climate change. As a financial institution, NN Group recognizes that we have an important role to play in promoting the low-carbon transition especially through our investments. This recognition of responsibility is also reflected in our support of various pledges and commitments. NN Group's commitment to strive for a net-zero greenhouse gas emissions portfolio by 2050. This is a key initiative under the strategic commitment Society: we contribute to the well-being of people and the planet. The Group's climate change strategy broadly consists of decarbonizing the portfolio in line with trajectories consistent with the Paris goals and increasing allocations to green investments.

NN Bank aims to be a sustainable business leader in the markets in which it operates. That

[1] Greenhouse gas emissions are calculated in CO_2-equivalent, which will be referred to as CO_2 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 14,661 objects. The Eligible Green Loan Portfolio represents 19% of the total outstanding amount of the total amount of the Nationale – Nederlanden bank N.V. mortgage portfolio
[4] The Reference Group is an anonymized portfolio from several clients from CFP Green Buildings, which contains about 140.000 comparable buildings.

includes creating long-term value for our customers, colleagues and society.

This offers us an opportunity to fulfil our purpose of helping people care for what matters most to them, now and in the future.

Our values care, clear, commit, and our brand promise, You matter, guide our actions. Our strategic commitments, focus on promoting the well-being of people and the planet. We do business with the future in mind and aim to contribute to a world in which people can thrive for generations to come.

Sustainability is one of the cornerstones of NN Bank's strategy. In addition, it is a core component of the Digital Retail Bank vision. NN Bank focuses on two key topics that will have a profound impact on the lives of our customers and the way they make financial decisions:

1. Customer empowerment:

We want to provide customers with the tools and resources needed to make better informed financial choices and exercise greater control over their personal financial situation. This includes helping them reduce individual housing and energy costs by providing them with insights and facilitating solutions.

2. Climate change and environment:

- We will steer our banking product portfolio, including our HQLA investment portfolio, towards net zero by 2050 or sooner, to align with the Paris Agreement 1.5°C pathway. To better serve our customers, we will pro-actively develop products and services that support our customers through the challenges of these transitions.

- We aim to reach net zero in our own operations by 2040 or sooner, in accordance with NN Group's sustainability goals.

Building year and energy label comparison

Figure 1 shows the distribution of energy labels in the NN Bank Eligible Loan Portfolio and the registered energy labels in the Netherlands for residential buildings[5]. As per year-end 2022 there are 1,541,218 registered energy labels with an A rating in the Netherlands[6]. This is 19.16% of all buildings in the Netherlands (8,045,580 buildings as per year-end 2022[7]). The NN Bank Eligible Loan Portfolio also takes the year of construction into account as criterion for the selection of the portfolio, as described in the Green Residential Buildings Methodology Assessment Document of June 2021. This is because the Dutch Building Regulation sets out energy efficiency requirements for different building types. As an example, the Dutch Building Code 2000 requires an EPC score of at least 1.0. Over time the Dutch Building Regulation becomes more stringent in terms of energy-efficiency and sustainability requirements for new buildings. The year of construction that is used as selection criterion is 2005. Approximately 14.8% of the total Dutch housing stock are residential buildings built since 2005[8]. Because NN Bank has chosen to use both criteria (building year and EPC A), buildings in the Eligible Green Loan Portfolio belong to the top 14.8% most energy-efficient buildings of the Dutch real estate market. In addition, buildings built in or after 2021 meeting the requirements for a PED lower

[5] Source for distribution registered EPC labels: http://www.ep-online.nl/
[6] Source for EPC labels: http://www.ep-online.nl/
[7] Source: Kadaster. The Dutch Land Registry and Mapping Agency.

[8] 13.0% of the total Dutch housing stock are residential buildings built between 2005-2020

than 10% threshold set for a Nearly Zero Energy Building (NZEB) are also included in the Eligible Green Loan portfolio.

Figure 1: Distribution of energy labels Eligible Green Loan Portfolio and residential buildings in the Netherlands

Methodology

The CO_2-emissions of the 14,661 eligible objects, as selected by NN Bank are determined by using the calculated energy consumption of these objects. The energy usage is based on algorithms and benchmarks from the expert system of CFP Green Buildings. CFP's Expert system is a database containing over 21 million square meters of actual energy data of buildings. A section of this anonymized 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 Centraal Bureau Statistiek (CBS), is used to improve and check the benchmarking model. In this study, the calculated energy consumption of the Reference Group was determined based on data from CBS[9] and CFP.

The total energy consumption can be converted to CO2 emissions by using standard conversion factors. The Dutch government created a widely accepted and uniform list with grid emission factors: http://www.co2emissiefactoren.nl.The grid emissions related to the direct emissions are used, which is also known as Tank-To-Wheel (TTW[10]). This is in accordance with the generally accepted PCAF[11] methodology. Whenever the origin of the consumed electricity is unknown, the emission factor for electricity from an undefined energy source should be used. The factor for electricity is updated regularly to reflect changes in the Dutch electricity mix. This leads to the following emission factors:

Applied GHG emission factors[12]

Natural gas	1.782	kg CO_2e /m^3
Electricity	0.29	kg CO_2e /kWh

Table 1: Dutch CO_2-emission factors

In addition, table 2 shows the distribution of the assets in the NN Bank green residential building portfolio among eligibility criteria:

1. A label and the top 15% of the national stock as described in the Green Residential Buildings Methodology Assessment Document of June 2021.
2. Buildings built since 2021 that meet a PED that is 10% lower than the NZEB requirements.

Criteria	Objects
Buildings built between 2005 - 2020 A label and top 15%	14,118
Buildings built since 2021 with PED of NZEB -10%	543

Table 2: Assets in the Green Building Portfolio

[9] The Dutch national statistical office. https://www.cbs.nl/en-gb
[10] Tank to Wheels (TTW) are the direct emissions of an activity. In this case, the direct emissions of the energy usage.

[11] PCAF is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the greenhouse gas (GHG) emissions associated with their loans and investments.
[12] Source: https://www.co2emissiefactoren.nl using TTW emissions, retrieved 18-04-2023

Energy consumption

Table 3 shows the calculated energy consumption of the Eligible Green Loan Portfolio. The calculated annual energy consumption is approximately 50.3 million kWh of electricity and 15.7 million m^3 of natural gas. To calculate the total energy consumption in kWh, the natural gas consumption in m^3 needs to be converted to kWh. One m^3 natural gas is equal to 9,769 kWh. So to convert the natural gas consumption to kWh, the consumption in m^3 must be multiplied by 9,769 giving a gas consumption of 153.2 million kWh. The total calculated energy consumption is 94.8 kWh per m^2 (23.4 + 71.4 kWh per m^2)[13].

	Electricity consumption		Natural gas consumption	
	(x1,000 kWh)	(kWh/m^2)	(x1,000 m^3)	(kWh/m^2)
Buildings built between 2005 -2020 A label and top 15%	48,483	23.4	15,685	73.8
Buildings built since 2021 (NZEB-10%)	1,838	25.9	0	0
Total Eligible portfolio	50,322	23.4	15,685	71.4

Table 3: Calculated energy consumption Eligible Green Loan Portfolio

CO_2-emission

Table 4 shows the CO_2-emissions of the Eligible Green Loan Portfolio and the Reference Group, based on the calculated energy consumption. The total CO_2-emissions of the Eligible Green Loan Portfolio is 46,615 tonnes CO_2 per year while the annual CO_2-emission for the Reference Group is 71,127 tonnes. Thus, the buildings are estimated to emit 24,512 tonnes of CO_2 per year less than the Reference Group.

	GHG emission Eligible Green Loan Portfolio (tonnes CO_2e)	GHG emission Reference (tonnes CO_2e)	GHG emissions Avoided (tonnes CO_2e)
Buildings built between 2005 -2020 A label and top 15%	45,937	68,774	22,838
Buildings built since 2021 (NZEB-10%)	678	2,352	1,674
Total Eligible portfolio	46,615	71,127	24,512

Table 4: CO_2-emission Eligible Green Loan Portfolio compared to the Reference Group

[13] The total electricity consumption (50.3 million kWh) and gas consumption (153 million kWh) is divided by the total amount of square meters of the portfolio (2.15 million m2), to calculate the electricity consumption (23.4 kWh/m2) and gas consumption (71.4 kWh/m2) per square meter.

Annual development of climate impact

CFP Green Buildings also gave insights in the energy consumption of the Eligible Green Loan Portfolio as per year-end 2021 and compared the CO_2-emissions of the Eligible Green Loan Portfolio to that of a comparable group of residential real estate with an average energy-efficiency. Figure 2 shows the energy consumption of the Eligible Green Loan Portfolio in 2021 and 2022. In order to compare outcomes of both reports the numbers are converted to consumption / CO_2-emissions per m^2.

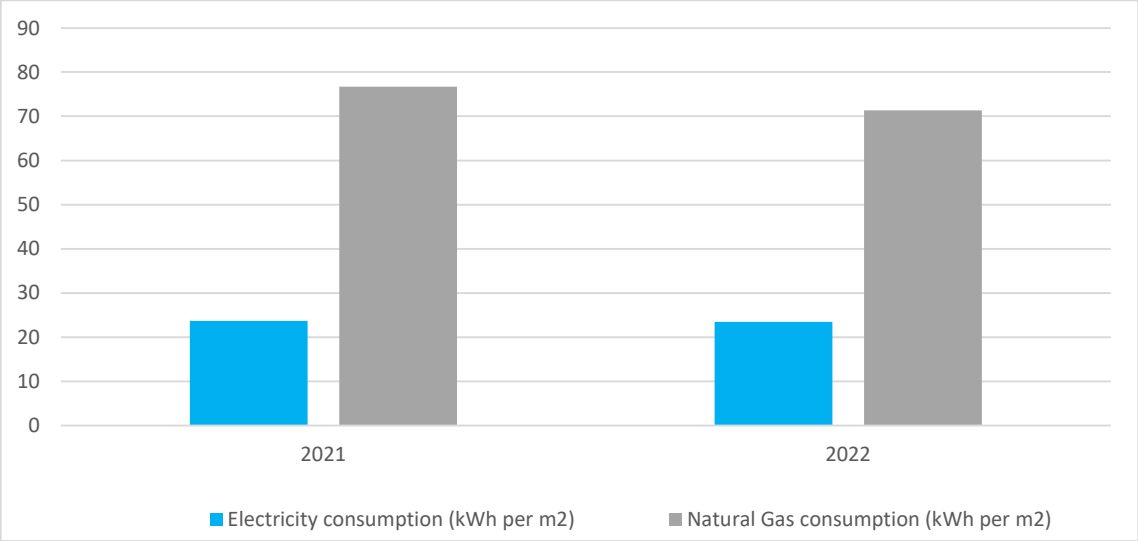

Figure 2: Calculated energy consumption comparison per m^2 Eligible Green Loan Portfolio

Figure 3 gives insights on the CO_2-Emissions per m^2 of the Eligible Green Loan Portfolio in 2021 and 2022. The total energy consumption is converted to CO_2-emission by using standard conversion factors. The CO_2-emission is calculated over the entire portfolio, divided by the total amount of square meters.

This graph shows that the GHG emissions per m^2 of the Eligible Green Loan Portfolio have decreased over the last year, from 22.8 kg CO_2/m2 to 21.7 kg CO_2/m^2. The amount of avoided emissions per m^2 have increased from 10.3 kg CO_2/m^2 to 11.4 kg CO_2/m^2.

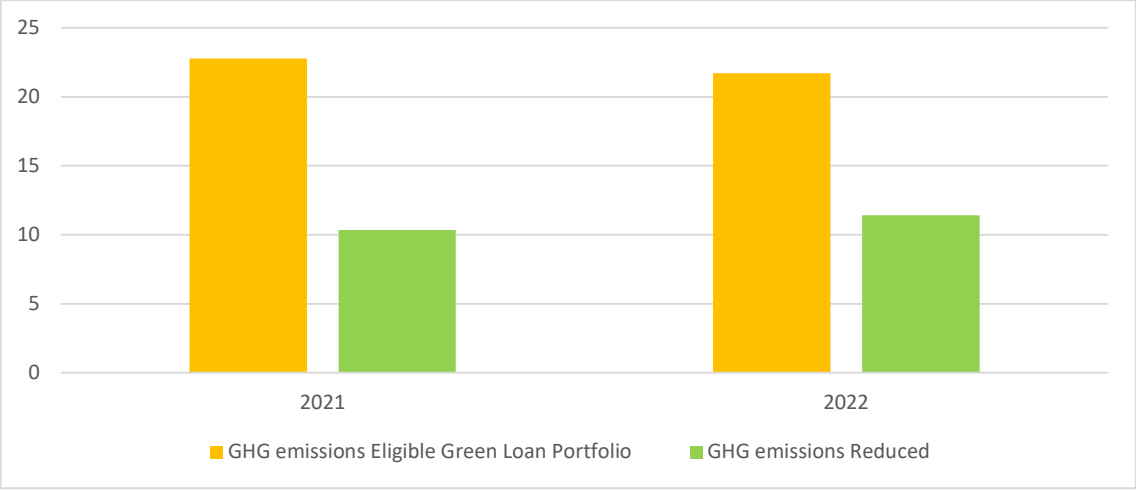

Figure 3: Reduced CO_2-Emissions per m^2 of the Eligible Green Loan Portfolio relative to the reference group.

Conclusion

The following conclusions are drawn from this study:

- The buildings in the Eligible Green Loan Portfolio are estimated to emit 24,512 tonnes of CO_2 per year less than the Reference Group, which is a difference of 34%.
- The total energy consumption is calculated at 94.8 kWh/m2.
- The avoided emissions have increased from 31% for 2021 to 34% for the year 2022. A total of 3% increased avoided emission performance in relation to the reference group.
- All buildings in the Eligible Green Loan Portfolio deliver a substantial contribution to climate change mitigation following the EU Taxonomy definition, either by having an EPC class A rating and belonging to the top 15% of the national building stock expressed as operational PED, or meeting the requirements for a PED lower than 10% threshold set for a Nearly Zero Energy Building (NZEB).