Green Bond Impact Report

Nationale-Nederlanden Bank N.V.

Financial Year 2021

NN Bank Green Bond Impact Reporting

31 December 2021

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	13,395	3,984	100%	100%	100.9	20,170
Total			**3,984**	**100%**	**100%**	**100.9**	**20,170**

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 climate delegated act 7.7
Alignment with EU Taxonomy Technical Screening Criteria (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

Impact assessment Green Loan Portfolio NN Bank

Project:	Impact assessment Eligible Green Loan Portfolio NN Bank
Subject:	Avoided CO_2-emission calculation
Date:	April 2022
Status:	Final

CFP Green Buildings has been asked to compare the greenhouse gas emissions[2] of a specific, energy-efficient group of residential real estate (in this document indicated as Eligible Green Loan Portfolio[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 the 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 and consumer loans, 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 18 million customers, is listed on Euronext Amsterdam and employs more than 14,000 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 recognises 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 decarbonising the portfolio in line with trajectories consistent with the Paris goals and increasing allocations to green investments.

To underline our ambition, NN Group endorses various commitments, such as the Commitment of the financial sector to the Dutch Climate Agreement (Klimaatakkoord). As NN Bank, we contribute to this through several initiatives to make the Dutch housing market more sustainable, we also realise that further development and efforts are required. In this respect our commitment to the Climate Agreement basically means four deliverables:

[2] Greenhouse gas emissions are calculated in CO_2-equivalent, which will be referred to as CO_2 throughout this document.
[3] The Eligible Green Loan Portfolio consists of 13,395 objects and represents 19% of the total outstanding amount of the Nationale-Nederlanden Bank N.V. mortgage portfolio.
[4] The Reference Group is an anonymised portfolio from several clients from CFP Green Buildings, which contains about 140.000 comparable buildings.

We have insight into our carbon footprint and publish it. Insight into both the CO_2 emissions of our own operations and the emissions of our proprietary investments, including the mortgage portfolio.

We set concrete goals and draw up an action plan to contribute to the Dutch Climate Agreement

- We offer and develop services and financial solutions for our customers, to facilitate making homes sustainable
- We evaluate our progress periodically and at least annually

Looking ahead, NN Bank will focus on two key ESG topics that will have a profound impact on the lives of our customers and the way they make financial decisions:

Customer empowerment:
NN Bank belongs to the top-performing financial services providers on customer empowerment. Customer empowerment is defined as NN Bank providing customers with the tools and resources they need to make better informed financial choices and exercise greater control over their personal financial situation.

Climate change & environment:
NN Bank steers its mortgage and its HQLA investment portfolio towards Net Zero by 2050, or sooner, to become Paris Agreement-compliant. We will set intermediate emissions reduction targets for 2030 for both our mortgage and investment portfolio. NN Bank's retail investment portfolio will adequately respond to changes in customers' preferences on ESG investing.
We aim to reach Net Zero in our own operations by 2040, or sooner, in accordance with NN Group's ambition To enhance our positive impact on society, NN Bank collaborates with other key stakeholders (e.g. academia, peers, governments) to make a joint impact on climate and customer empowerment.

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Energy label comparison

Figure 1 shows the distribution of the energy labels of NN Bank Green Loan Portfolio and the registered energy labels in the Netherlands for residential buildings. In the NN Bank Green Loan Portfolio, all of the objects have a registered energy label A. As per end the of 2020 there are 1,217,535 registered energy labels with an A rating in the Netherlands.3 This is 15.5% of all buildings in the Netherlands (7,815,000 buildings as per end of 20204). The NN Bank Green Loan Portfolio also takes the year of construction into account as criterion for the selection of the portfolio. 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. 13.3% of the total Dutch housing stock are residential buildings with an enery label A and built after 2005. Because NN Bank has chosen to use both criteria (building year and EPC A), buildings in the Eligible Loan Portfolio belong to the top 13.3% most energy-efficient buildings of the Dutch real estate market.

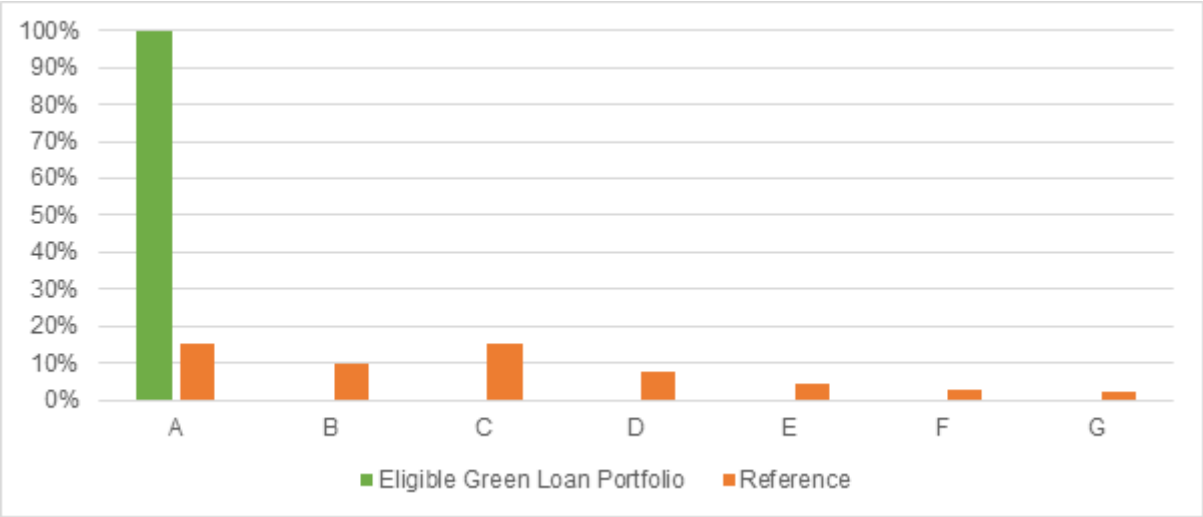

Figure 1: Distribution of energy labels Eligible Green Loan Portfolio and residential buildings in the Netherlands

Methodology

The CO_2-emissions of the 13,395 eligible objects, as selected by the 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 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 Centraal Bureau Statistiek[5] (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 and CFP.

The total energy consumption can be converted to CO_2 emissions by using standard conversion factors. The Dutch government created a widely accepted and uniform list with grid emission factors: www.co2emissiefactoren.nl. The grid emissions related to the direct emissions are used, which is also known as Tank-To-Wheel (TTW[6]). This is in accordance with the generally accepted PCAF[6] 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 Emission factors[7]	
Natural gas	1.788	kg CO_2e /m³
Electricity	0.369	kg CO_2e /kWh

Table 1: Applied CO_2-emission factors

[5] Source: the Dutch national statistical office: https://www.cbs.nl/en-gb
[6] Partnership for Carbon Accounting Financials (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.
[7] Source: https://www.co2emissiefactoren.nl using TTW emissions, retrieved on 13-04-2022.

Energy consumption

Table 2 shows the calculated energy consumption of the Eligible Green Loan Portfolio. The calculated annual energy consumption is approximately 46.9 million kWh of electricity and 15.6 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 151 million kWh. The total calculated energy consumption is 100.9 kWh per m^2 (23.8 + 77.1 kWh per m^2)[8].

	Electricity consumption		*Natural gas consumption*	
	(x1000 kWh)	(kWh/m^2)	(x1000 m^3)	(kWh/m^2)
Consumption of the Eligible Green Loan Portfolio	46,910,773	23.8	15,564,254	77.1

Table 2: Calculated energy consumption Eligible Green Loan Portfolio

CO_2-emission

Table 3 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 45,139 tonnes CO_2 per year. The annual CO_2-emission for the Reference Group is 65,308 tonnes.

	GHG emissions Eligible Green Loan Portfolio (tonnes CO_2e)	*GHG emissions Reference (tonnes CO_2e)*	*GHG emissions Reduced (tonnes CO_2e)*
CO_2-emissions of the Eligible Green Loan Portfolio	45,139	65,308	20,170

Table 3: CO_2-emission Eligible Green Loan Portfolio compared to the Reference Group

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 2020 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 2020 and 2021. In order to compare outcomes of both reports the numbers are converted to consumption/ CO_2-emissions per m^2.

[8] The total electricity consumption (46.9 million kWh) and gas consumption (151 million kWh) is divided by the total amount of square meters of the portfolio (1.97 million m2), to calculate the electricity consumption (23.8 kWh/m2) and gas consumption (77.1 kWh/m2) per square meter.

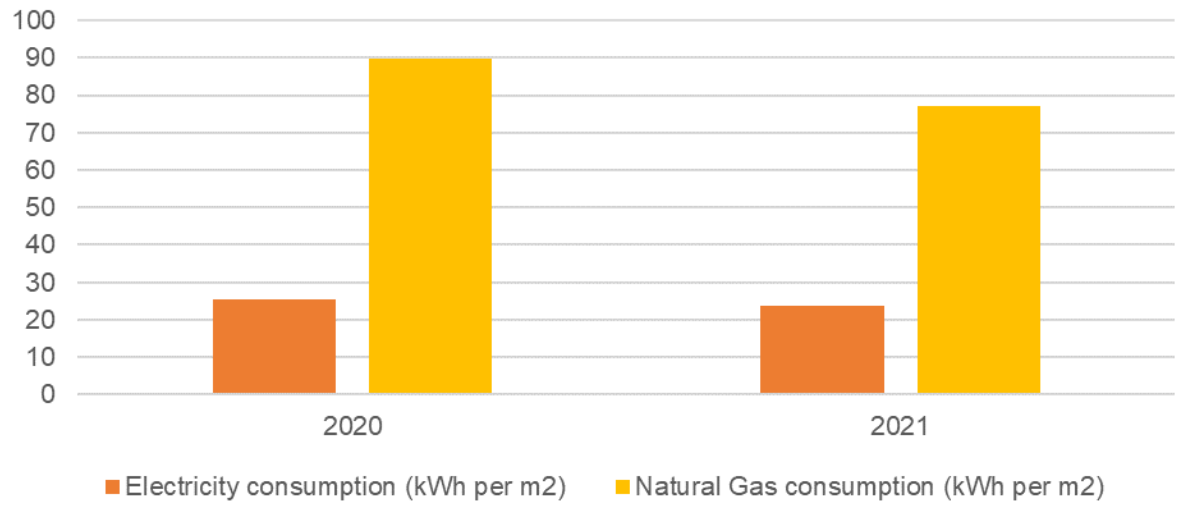

Figure 2: Calculated energy consumption per m2 Eligible Green Loan Portfolio in 2020 and 2021.

Figure 3 gives insights in the CO2-emissions per m2 of the Eligible Green Loan Portfolio in 2020 and 2021. The total energy consumption is converted to CO2 emission by using standard conversion factors. The CO2-emission is calculated over the entire portfolio, divided by the total amount of square meters. This graph shows that the GHG emissions per m2 of the Eligible Green Loan Portfolio have decreased over the last year, from 27 CO2/m2 to 23 CO2/m2.

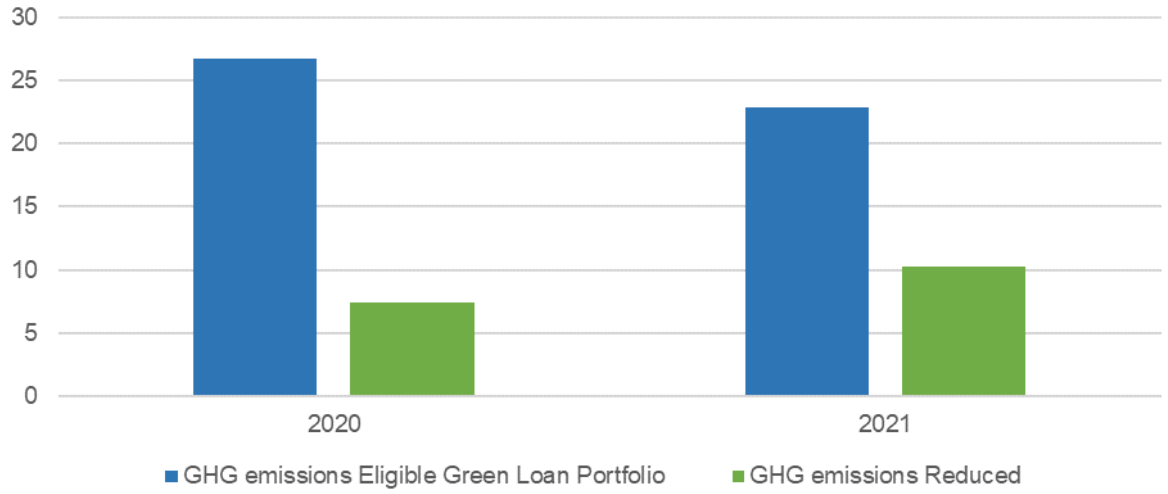

Figure 3: CO_2-emission per m^2 of the Eligible Green Loan Portfolio and the reduced emissions compared to the reference group.

Conclusion

The following conclusions are drawn from this study:

- The buildings in the Eligible Green Loan Portfolio are estimated to emit 20,170 tonnes of CO2 per year less than the Reference Group, which is a difference of 31%.
- The total energy consumption is calculated at 101 kWh/m2.
- Based on the official and calculated energy labels and year of construction, buildings in the Eligible Green Loan Portfolio belongs to the top 13.3% most energy-efficient buildings of the Dutch real estate market.