RNHB GHG Emission Report 2022

April 2023

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1. Introduction

The discussion around climate change effects is no longer a 'future problem' as the effects of climate change are already visible. Governments are increasingly addressing social and environmental issues with, amongst others, the Paris Climate Act. The Paris Climate Act was agreed to in 2015, with the EU and 193 countries across the globe committed to implementing measures to reach these climate goals. Our stakeholders: tenants, investors, funders, legislators and regulators expect us to act on sustainability and as a company RNHB feels it can make a difference in our own way.

As a property lender, we can facilitate the energy transition to a more sustainable property environment. To do this, we have chosen an impact strategy where we both support our clients in making their real estate assets more sustainable; and (voluntarily) offset the residual GHG emissions of our corporate activities and securitised portfolio emissions. We incentivise our clients for property enhancements with propositions, lending and providing relevant content and information to inspire and support them in taking steps towards sustainability enhancements. Up to the point that clients have reached targeted emission levels, financed emissions of our securitised portfolios under the DPF shelve (as from July 2021); and our full direct corporate emissions will be voluntarily offset with carbon credit certificates. As such, we not only aim at reducing (future) emissions, but we are also compensating current emissions.

We continuously track the sustainability levels and GHG emissions of our portfolio to align our portfolio with our ESG strategy. We have committed to measure and disclose the GHG emissions of our portfolio for transparency and accountability purposes and as such, have joined the Partnership for Carbon Accounting Financials (PCAF) in July 2021. This is a global partnership of financial institutions that work together to develop and implement a harmonized approach to assess and disclose the GHG emissions associated with loans and investments. We use the PCAF methodology to calculate the carbon footprint of our portfolio and more specifically our securitised portfolios. We now present our first GHG emissions report. In this report, we present our carbon offset strategy, our calculation methods and our portfolio emissions and offsetting. For this report, we have combined public data sources and our own data sources for our calculations. We are committed to further enhance the data quality of our report in the future as carbon accounting is still developing and underlying data improves over time.

April 2023,

Stuart Lammin, CEO RNHB
Richard van Altena, CFO RNHB

2. RNHB carbon offset strategy

RNHB will voluntarily offset carbon emissions on newly launched securitisations under its DPF shelve and on corporate level

RNHB will voluntarily offset its direct emissions and partly offset its indirect emissions for all securitized portfolios, and has implemented a “Carbon-Neutral” policy with regards to its operations and employees. The purpose of this policy is to contribute to the Dutch governments goals of reducing Greenhouse Gas emissions by 49% in 2030 (compared to 1990 levels).

As from July 2021, a minimizing policy for securitised portfolios was implemented where RNHB will offset residual financed emissions of the portfolio for the lifetime of the deal up to an A energy label. RNHB’s emissions offset strategy is based on the following two parameters:

- All energy labels A and above will not be offset
- If the energy label has improved by at least two labels (which in itself significantly reduces emissions) these emissions will also not be offset
- Everything else will be offset up to an A energy label.

Generated emissions

- Corporate footprint / generated emissions (direct)
- Financed emissions from loan portfolio (indirect)

A Balanced Offset Strategy

RNHB holds a balanced carbon offset strategy aimed at projects focussing on avoiding additional emissions and removing existing emissions.

Our mitigation solutions focus on:

- Avoiding new fossil fuel emissions (including renewable energy projects)
- Investing in high-quality attribute certificates for renewable energy: supporting new energy generation capacity and sustainable development and that are in harmony with nature and communities.

We aim to remove existing emissions from the atmosphere (including nature-based projects) by investing in projects that harness the power of nature to reduce greenhouse gas emissions and deliver a wide range of benefits to ecosystems and the communities that depend on them.

In addition, RNHB aims to align its portfolio of offset projects with its ESG strategy.For example, projects in low- and middle-income countries should finance offset initiatives from these countries to reduce inequality in the global economy. The portfolio of offset projects should support the SDGs of the ESG strategy. All compensation types are accepted as compensation methodology for PCAF reporting, of which RNHB is a signatory.

Offset emissions

Emissions reduction

Without carbon storage:
- Renewable energy

With carbon storage:
- Avoided damage in ecosystems
- Carbon Capture Storage (CCS)

Carbon removal

- Afforestation
- Reforestation
- Soil carbon enhancements
- Ecosystem restoration

3. RNHB portfolio emissions

40% of total GHG emissions in The Netherlands comes from properties. In order to achieve the ambitions of the Paris Climate Act, the properties in The Netherlands must be made more sustainable. As a property lender, RNHB can play a key role in helping to finance the step-by-step transition to a sustainable property environment and consequently lowering the GHG emission levels of real estate assets.

Energy label distribution

The energy labels in our database are derived from two sources:

- Valuation report at origination and/or updated (full) valuations as per RNHB policy;
- EP online database of the RVO.

The final energy label is determined by the better of either one of these sources. The valuation reports contain the most updated state of the asset, but is updated less frequent (upon RNHB policy). The EP online database is updated quarterly, but there is a lagging effect in this as new energy labels aren't submitted upon enhancement.

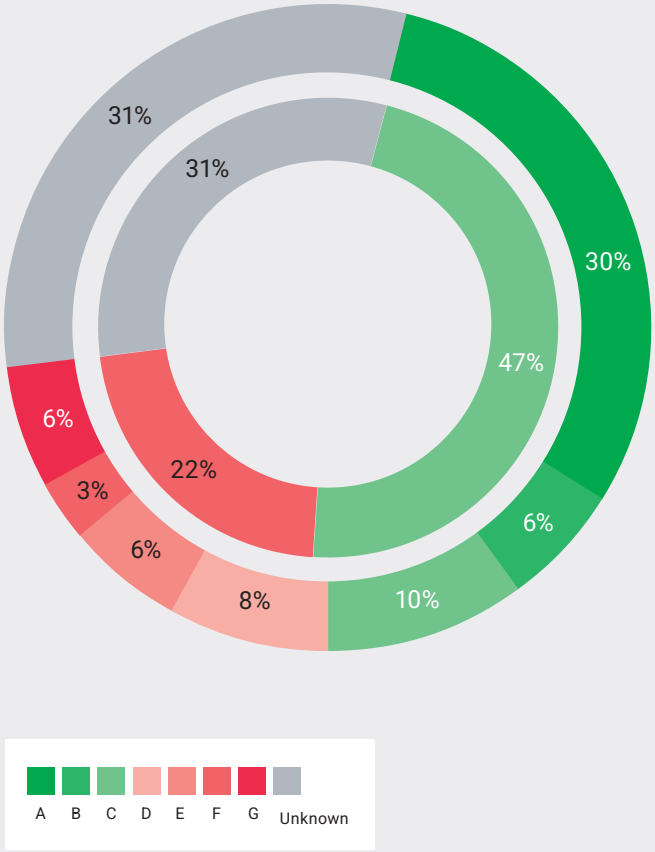
Almost half of the portfolio has a green energy label

The energy label distribution of our portfolio is shown in the righthanded pie chart. As you can see 47% of the portfolio already has a green energy label (label A-C) and 30% label A or better. For 31% of the portfolio, the energy label was unknown - or no match could be made due to data quality issues like differences in suffix notation in addresses. We expect to obtain and update this data over time.

Energy and gas consumptions

The annual emissions are derived from the Central Bureau of Statistics (CBS) that disclose average energy and gas consumption levels per postal code on an annual basis. Based on the CO2 emissions factors, gas and electricity consumption are converted into GHG emissions.
By using this source, we also have estimates of consumption levels for properties with an unknown energy label.
This methodology does not include square meters, since this data is not available. Based on this data, the GHG emissions are calculated in accordance with the PCAF methodology.

Energy label distribution of portfolio



Portfolio GHG emissions 2022

RNHB applies several criteria when the determining the financed emissions for offsetting:

1 The loan-to-value of the loan; and
2 Energy label correction criteria:
   a Sustainable loan(part)s: exclude emissions for properties that have label A or better
   b Impactful loan(part)s: exclude emissions for lending that is / was used to enhance the energy label of a property with minimal 2 label steps

The table below shows the calculated emissions before and after applying the energy label correction criteria for the DPFs for which RNHB is offsetting the emissions based on a full year basis. For more details regarding the calculation please see the appendix.

Distribution of energy labels and GHG emissions after applying RNHB criteria[1]

	A or above	B	C	D	E	F	G	Unknown	Total
Annual GHG emissions before energy label correction (ton)	4,792	974	1,716	1,224	1,143	642	970	7,492	18,953
Annual GHG emissions after energy label correction (ton)	0	472	902	770	883	574	970	5,794	10,365
Total emissions	0.0%	4.6%	8.7%	7.4%	8.5%	5.5%	9.4%	55.9%	100.0%

Voluntary GHG offsetting

Total emissions of 2021 and 2022 for the DPFs for which RNHB is offsetting the emissions from the moment the deal was closed are shown in the table below.

- Emissions for 2021 have been fully offset for the lifetime of the deal (5 years) by retirement of carbon credit certificates.
- Emissions for 2022 will be offset on an annual and actual basis, the first offset will take place in Q2 2023.
- The emissions for our new DPF2023-1 deal which closed in February 2023 has also been offset in line with previous DPFs. This information will be included in the 2023 report.

RNHB voluntarily offsets GHG emission for securitisation transactions as from 2021

	Allocated Loan Amount (mln)[3]	Implied market value (mln)[3]	Total actual GHG emissions in 2022 (ton)	GHG emissions retired
DPF 2021 deal[2]	403	707	4,329	49,000
Corporate footprint 2020-2021[4]				500
Total emissions 2021			4,329	
DPF 2022 deals	804	1,438	4,668	
Corporate footprint 2022[4]			207	
Total emissions 2022			4,875	

1. This table covers DPF 2021-2, DPF 2022-1, DPF 2022-2 and DPF 2022-CMBS1 deals. Cut-off date is 2022-12-31
2. Please note that for the 2021 portfolio, GHG emissions have been retired for lifetime of the deal at closing of the deal in 2021
3. Both ALA and implied market value are per end of Dec 2022
4. Corporate footprint 2020-2021 are higher than 2022 as due to Covid people were working from home almost fulltime for majority of the year

Appendix

PCAF methodology

Financed carbon emission calculations aligned with PCAF standard

RNHB uses the following sources for determining emissions at property level:

- RNHB portfolio data on address level;
- Energy labels from either the valuation report or EP Online database;
- Average property gas and power utilisation per postcode based on CBS data publication;
- GHG emission calculated on basis of emission conversion factor per m^3 gas consumption and kWh power consumption.

To calculate final total emissions to be offset RNHB applies several criteria:

- Exclusion criteria for offsetting
  Here we distinguish between sustainable loans (all label A or higher – as this is already green) and impactful loans (assets that saw an energy label enhancement of a minimum of 2 labels resulting from our loan, as the loan proved to be impactful;
- All emissions are corrected for Energy label A emissions as assets will have remaining emissions (energy label factor);
- For unknown energy labels the average energy label factor of B till G is used;
- Emission adjusted for Allocated Loan Amount (ALA) LTV (financed emissions);
- Apply CPR of 8% for RMBS and 0% for CMBS to determine lifetime deal emissions.

GHG offsetting is done on actual basis at the anniversary of the deal. This implies:

- A monthly monitoring of the amortisation and energy labels;
- Retirement at anniversary of the deal – first retirement in May 2023.

Please note that for the 2021 portfolio, GHG emissions have been calculated as described above, but retirement for lifetime of the deal took place at closing of the deal.

PCAF will publish a specific standard for mortgage GHG emission, a new approach for residential mortgages. Once published, we will assess the impact on RNHB.
For corporate carbon footprint, RNHB calculates Carbon Dioxide emissions in accordance with a third-party developed Carbon-Accounting grid (Cool Climate Network for Businesses of Berkeley).

Financed emission is calculated as per PCAF standard

$$\text{Financed emissions} = \sum_{b,e} \frac{\text{Outstanding amount}_b}{\text{Property value at origination}_b} \text{ X Energy consumption}_{b,e} \text{ X Emission factor}_e$$

(with b = building and e = energy source)

Definitions	Description
Portfolio	Securitised portfolios as of H2 2021
Energy label	The better of the energy label of the valuation report or EP online database[1]
EP online database	Public Dutch database of energy labels on address level held by the government (RVO)
Sustainable loan(part)	Lending for label A property
Impactful loan(part)	Lending to enhance the energy label of a property with minimal 2 label steps
No labels	Corrected for label A based on weighting principle and exempt Label A
Correction for label A emissions (energy label factor)	As all assets will have remaining emissions due to consumption, we correct the emissions for average label A consumption per property type
Period	Monthly amortisation approach at property level
CPR	8% for RMBS and 0% for CMBS

Annual GHG emission calculation

CBS	Gas & electric utilisations per zip code	Gas & electric utilisations per property	Total annual emission (ton)
	Energy index	Energy label factor	
RNHB database	Energy label		
	LTV = Allocated loan amount / Implied market value	LTV factor	
CO_2 emissiefactoren	Gas factor	1.788 kg CO_2/m^3	
	Electric factor	0.369 kg CO_2/kWh	

For each property:

Total annual emission (ton) = (Gas emission x Energy label factor x LTV factor x Gas factor) + (Electric emission x Energy label factor x LTV factor x Electric factor) X Exclusion criteria

1. Central registry of energy labels by The Netherlands Enterprise Agency (RVO)

GHG emission data quality

Current situation: Score 5 data quality
RNHB is currently using average property gas and power utilisation per postcode from CBS, which result to data quality Score 5. We also currently use the better energy label in valuation reports and EP Online.

Target situation: Score 3 data quality
To achieve this situation, the following has to be completed:

- PCAF will publish the PCAF Score 3 Reporting Standard for Dutch Residential Real Estate. RNHB will work together with the real estate industry to try and implement solutions to enhance available data.
- PCAF is trying to get exact measurement of energy usage of homes from energy grid operators.
- RNHB will continue to strengthen and complete its database with most recent updated energy labels.

Data quality score for mortgages from PCAF

Data Quality	Options to estimate the financed emissions		When to use each option
Score 1	Option 1: Actual building emissions	1a	Primary data on actual building energy consumption (i.e., metered data) is available. Emissions are calculated using actual building energy consumption and supplier-specific emission factors 136 specific to the respective energy source.
Score 2		1b	Primary data on actual building energy consumption (i.e., metered data) is available. Emissions are calculated using actual building energy consumption and average emission factors specific to the respective energy source.
Score 3	Option 2: Estimated building emissions based on floor area	2a	Estimated building energy consumption per floor area based on official building energy labels AND the floor area are available. Emissions are calculated using estimated building energy consumption and average emission factors specific to the respective energy source.
Score 4		2b	Estimated building energy consumption per floor area based on building type and location-specific statistical data AND the floor area are available. Emissions are calculated using estimated building energy consumption and average emission factors specific to the respective energy source.
Score 5	Option 3: Estimated building emissions based on number of buildings	3	Estimated building energy consumption per building based on building type and location-specific statistical data AND the number of buildigs are available. Emissions are calculated using estimated building energy consumption and average emission factors specific to the respective energy source.

(score 1 + highest data quality: score 5 = lowest data quality)