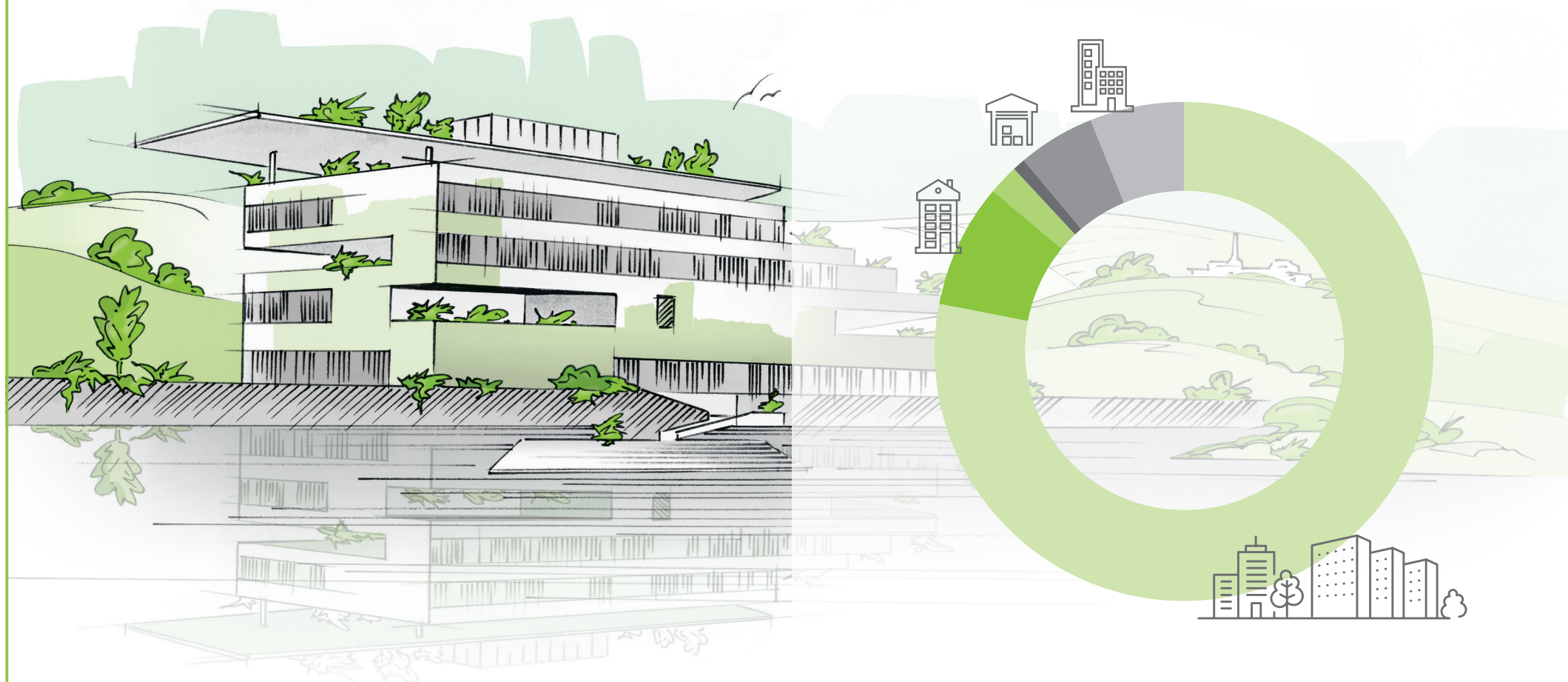


# pbb Green Bond Impact Reporting 2021

pbb

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# Foreword

pbb Deutsche Pfandbriefbank is a specialist lender supporting commercial real estate investments in Germany and other major European economies, as well as in the United States. This makes us an important **partner for the real estate industry**. As a bank, our ecological footprint is by definition relatively small: we endeavour to avoid harming the environment and generating CO<sub>2</sub> emissions wherever possible, and to offset such emissions at least in part where they are unavoidable.

Where we can make a difference is through implementing a comprehensive **Sustainable Finance** approach: We aim to direct funds towards more climate-neutral investments – in pbb's case towards more climate friendly buildings – in support of the EU Commission's European Green Deal, a growth initiative to make Europe the first climate-neutral continent by 2050.

Through the construction and operation of buildings, the real estate industry is currently responsible for around 40% of global CO<sub>2</sub> emissions. That is why we grant **green loans** to finance investments in sustainable real estate, as well as investments aimed at turning existing buildings into sustainable ones. Reviewing the sustainability of buildings against which we lend has become an integral part of our credit process.

Supporting the transformation of the real estate industry through increasing the ratio of green assets in our lending book is an **obligation towards society and a significant business opportunity** at the same time. It adds to our business potential and safeguards our balance sheet from assets that might become unviable or stranded.

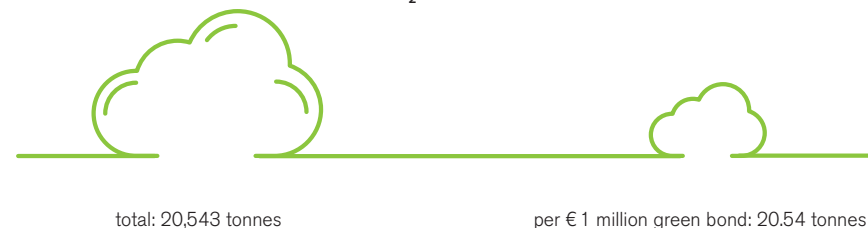
## Green Bond Pool



## Outstanding pbb Green Bonds



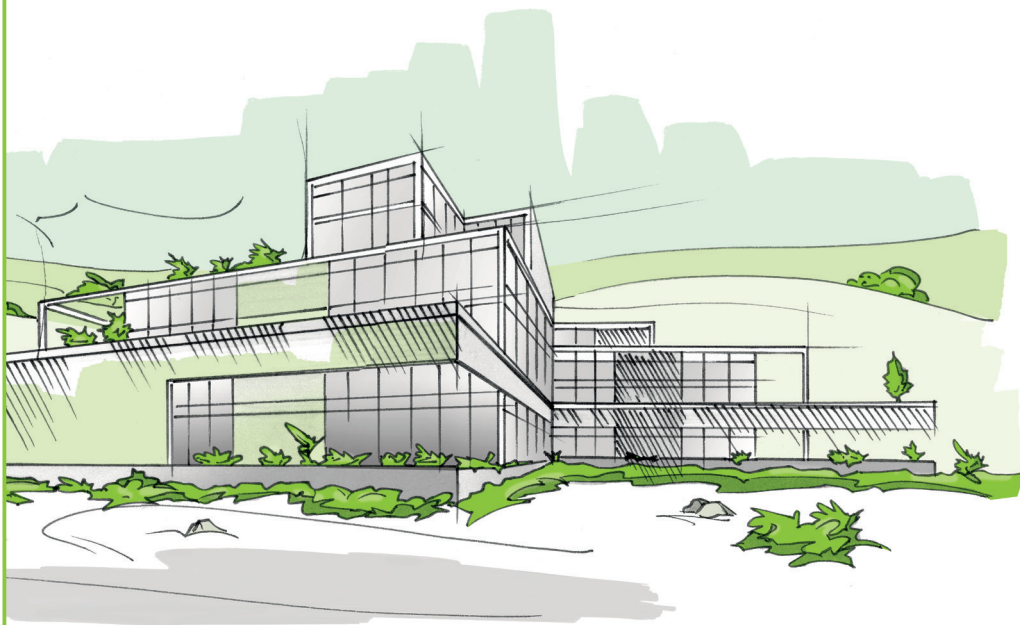
## CO<sub>2</sub> reduction



all data as of 30 November 2021

Our **green bonds** – issued for funding our green assets – close the circle of our Sustainable Finance activities by offering institutional investors a sustainable investment option and opening up new investor groups. We issued our inaugural green bond in early 2021. Green bonds require an annual impact report, which we are presenting now for the first time.

The outstanding volume of our green bonds was € 1 billion as at 30 November, whilst our portfolio of green bond eligible assets stood at € 1.3 billion. The **reduction in CO<sub>2</sub> emissions** from properties financed with green bonds totalled 20,543 tonnes. This means that 20.54 tonnes of CO<sub>2</sub> were saved for every € 1 million issued bonds.



Sustainable Finance – granting green loans and issuing green bonds – is part of pbb's **comprehensive ESG strategy**: We align our business activities with ecological and social criteria and adhere to good corporate governance standards, placing ESG requirements at the centre of what we do. We also adjust our risk management and the control of our risk standards to properly reflect ESG risk as defined by regulatory standards. Since the 2021 financial year, our internal ESG programme has bundled all ESG-related topics that are of relevance to pbb.

Our ESG activities serve the primary purpose of steadily **increasing the share of green financings** in our loan portfolio, and building a corresponding position of green bonds on the liabilities side of the balance sheet. At the same time, we want to gather more data on pbb's ecological footprint and reduce our impact on the environment, whilst expanding our reporting on sustainability and ESG.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'M. Schulte', written over a thin horizontal line.

Marcus Schulte  
Member of the Management Board

# Sustainable Finance – from green loans to green bonds

As we align our business activities with ecological and social criteria as well as good corporate governance standards, our focus lies on Sustainable Finance, i.e. granting green loans and issuing green bonds. There is as of yet no established standard for green loans in the market. Therefore, pbb has developed a Green Loan Framework geared towards two elements: a proprietary scoring model that builds on the EU Taxonomy, or fulfilment of the requirements set forth in the EU Taxonomy. The pbb scoring model allows for the assessment of real estate using specific criteria derived from the taxonomy; from a defined score upwards, real estate qualifies for green lending.

## Scoring model or EU Taxonomy for green loans

pbb's scoring model takes three dimensions into account: the energy efficiency of buildings, building certifications, and further sustainability factors. The latter include factors such as soil surface sealing or the availability of, and distance to, the public transportation network, as well as the use of recycled materials for construction or the type of heating and use of green electricity.

With its Green Loan Framework, pbb deliberately includes more than just the energy efficiency of a building as prerequisite for a green loan. Low final energy consumption is thus a necessary criterion, but not the only factor.

## pbb applies ICMA Green Bond Principles to issue green bonds

The issuance of green bonds also requires a framework. The ICMA Green Bond Principles have become the standard here. pbb's own Green Bond Framework follows the ICMA Green Bond Principles. A Green Bond Committee selects the

properties and unanimously decides which loans to add to the reference portfolio. Over time, the composition of the portfolio will change as loans are repaid and new ones are originated.

## Integral funding instrument

Green bonds have evolved to become an integral part of pbb's funding. pbb's framework allows for the issuance of green bonds either as Pfandbriefe, i.e. German covered bonds, or as unsecured bonds, giving the option of senior preferred bonds and senior non-preferred bonds for the latter. As of 30 November 2021, pbb had issued green bonds exclusively in the form of senior preferred benchmarks. It also sees this as the focus of its green funding activities for the future, given the slightly higher "greenium" of unsecured bonds over covered bonds.

An impact report for pbb's green bonds is published annually. The second party opinion required for green bonds is provided by CICERO Shades of Green, one of the leading players in this field.

## Green Bond Framework to be developed further

As the Green Bond market is a dynamic one, pbb's Green Bond Framework will likely be continuously updated. The next updates could include amendments with regards to energy efficiency rules in the Green Bond Framework. Furthermore we will carefully monitor to what extent the bond market will gravitate towards the EU taxonomy and adjusted green bond frameworks in line with market developments.

# Green Bond asset pool as per 30 November 2021

For properties to be included in the green bond asset pool, their final energy consumption must not exceed pre-defined thresholds per property type or they have a building certificate. On top of these hard criteria, heating technology (no coal- or oil-powered systems) and soil sealing (12% greenfield) are taken into consideration. As per 30 November 2021, the pool consisted of 44 properties, including 1 residential portfolio which is counted as one property, with **€1.3 billion in loans**. Energy performance certificates were not analysed for efficiency classes as the database was not sufficient.

Commercial real estate loans typically run for around five years, but this term may decrease due to early loan repayments. Both green bonds issued so far by pbb – with a **volume of €500 million each** – were fully covered as at the time of issuance and as at the impact reporting date. To ensure coverage going forward, new loans will have to be added to the green bond asset pool. In line with its broader ESG strategy, pbb is confident that it will originate sufficient eligible loans in the future. According to the framework, investments in other issuers' green bonds can serve to offset a short-term shortfall.

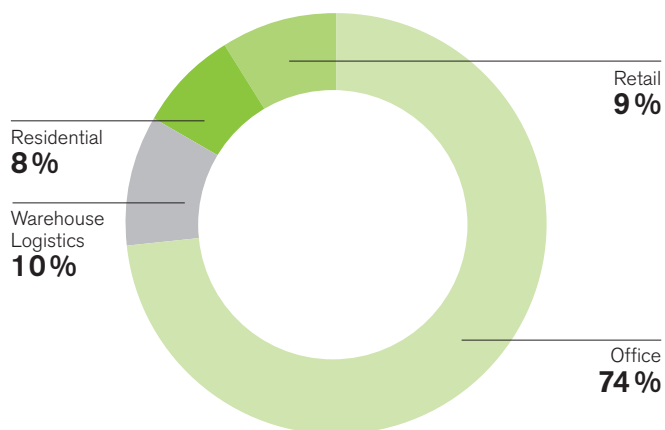
## Development of Green Bond Assets and Green Bonds outstanding (€mn)





# Reference Portfolio: approx. € ~ 1.3 bn as of 11/2021

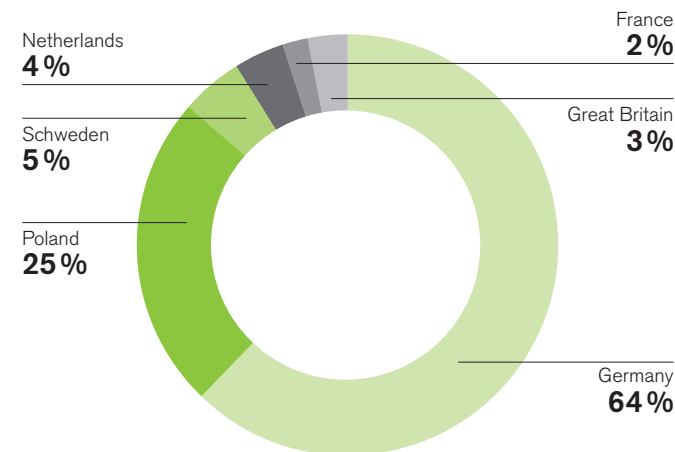
## Breakdown by property type



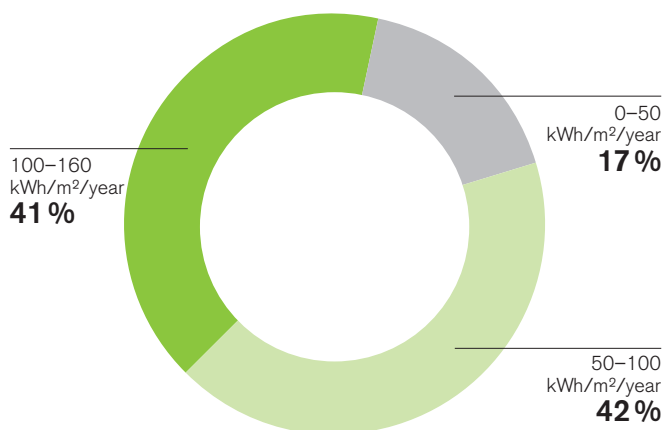
74 % of pbb's green bond asset pool consists of office properties. The **high share of office properties** comes as no surprise, since these properties also represent the majority of pbb's total loan book. Logistics, retail and residential – each make up 10% or slightly less of the green bond asset pool.

Almost 90% of all properties are located in **Germany or Poland** with Germany accounting for the by far highest portion.

## Breakdown by country



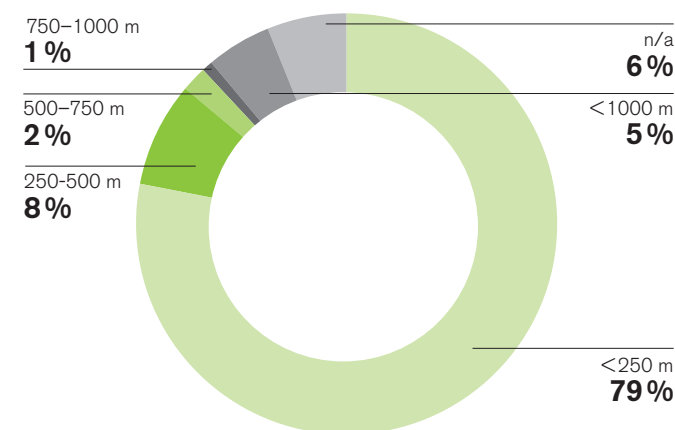
## Breakdown by final energy consumption



The aggregate **final energy consumption** for electricity and heating for most of the assets lies in the middle cluster of between 50 and 100 kWh/m²/year. One in six of the properties in the current pool ranks in the lowest cluster of up to 50 kWh/m²/year.

Almost 90% of assets in the Pool are located no further than 500 metres from **public transport**.

## Breakdown by distance to public transport



# Impact report – methodology and results

The CO<sub>2</sub> reduction emanating from properties financed by pbb is determined by comparing these properties' emissions against a benchmark representing the emissions of standard properties in the market. Where energy performance certificates do not contain information on CO<sub>2</sub> emissions, these are calculated from primary or final energy using conversion factors. In the interests of transparency and traceability, methodology and results are discussed below. Data concerning the underlying property financings was last updated on 30 November 2021.

## Analysis of financed properties

The data on CO<sub>2</sub> emissions is taken from the energy performance certificates, which every property in the green bond assets pool is required to have. Where energy performance certificates do not contain information on CO<sub>2</sub> emissions, such emissions are calculated from primary or final energy using the formula outlined below. Calculations and reporting apply to one year.

### CO<sub>2</sub> Emissions =

primary energy **X** CO<sub>2</sub> emissions factor

**X** floor space as per energy performance certificate

$$\left( \text{kg CO}_2 = \frac{\text{kWh}}{\text{m}^2} \times \frac{\text{kg CO}_2}{\text{kWh}} \times \text{m}^2 \right)$$

### Primary Energy =

final energy **X** primary energy factor

$$\left( \frac{\text{kWh}}{\text{m}^2} = \frac{\text{kWh}}{\text{m}^2} \times \text{factor} \right)$$

- 
- Primary energy factors in accordance with the DIN V 18599-1 norm.
  - CO<sub>2</sub> emission factors in accordance with the following norms (publicly available sources):
    - Electricity: European Environment Agency
    - Fossil fuel-based heating: German Environment Agency.
  - Data on primary energy factors or CO<sub>2</sub> emission factors provided by regional utilities (based on publicly available sources) are permissible.

CO<sub>2</sub> emissions for electricity and heating are recorded separately. Absent respective data in the energy performance certificates, consumption will be split in a ratio that is typical for the property in question. The sum of these emissions yields the CO<sub>2</sub> emissions from unsustainable resources of the building.

## Benchmark definition

Data pertaining to the average energy consumption of commercial and residential buildings in individual European countries, which is required to be able to compare the properties with the standard in the market, is taken from the ENTRANZE project. This project was established against the backdrop of two EU Directives which require member states to develop ambitious policies in the building sector.

ENTRANZE data provide country- and property-specific reference values for all properties in pbb's green bond asset pool. For comparability purposes, these energy consumption values are converted into CO<sub>2</sub> values using country-specific factors reflecting a mix of electricity and heating. pbb uses public information.

## Impact calculation

Finally, the green bond asset pool's CO<sub>2</sub> impact is calculated by comparing the property's emission values with the derived ENTRANZE value. In this comparison, however, only pbb's financing share is taken into account. The CO<sub>2</sub> reductions of all properties are then added up to yield the total green bond asset pool's annual impact. As per 30 November 2021, this reduction stood at 20,543 tonnes of CO<sub>2</sub> per year. This means 20.54 tonnes of CO<sub>2</sub> were saved for every € 1 million issued bonds or 15.83 tonnes of CO<sub>2</sub> were saved per every €1 million financed, based on a total financed volume of € 1.3 billion, respectively.



# List of properties

Property Type	Loan Amount in €	Year of Construction	Final Energy Consumption in kWh/m² p.a.	Heating System
Logistics	42.320.127	2009	17	
Logistics	26.747.279	2018	60	
Logistics	21.026.287	2018	59	
Logistics	20.872.562	2015	26	
Logistics	17.177.810	2018	58	
Office	88.486.782	1996	115	
Office	81.375.000	1992	155	
Office	71.491.667	2016	78	
Office	63.195.000	2016	64	
Office	60.000.000	2016	42	
Office	59.000.000	2009	62	
Office	49.500.000	2003	131	
Office	44.325.000	1972	154	
Office	42.460.071	2013	49	
Office	41.750.000	2020	64	
Office	41.586.060	2009	115	
Office	40.850.000	2018	60	
Office	23.192.226	2007	140	
Office	22.160.132	2001	143	
Office	20.437.391	1991	98	
Office	20.069.400	2008	130	
Office	19.861.783	1985	139	

Property Type	Loan Amount in €	Year of Construction	Final Energy Consumption in kWh/m² p.a.	Heating System
Office	17.000.000	1988	143	
Office	14.460.260	2018	115	
Office	14.357.340	1992	42	
Office	14.063.337	2000	93	
Office	13.670.729	2016	83	
Office	12.742.471	2008	112	
Office	11.196.247	2012	116	
Office	11.100.000	2004	120	
Office	10.268.590	2015	36	
Office	10.041.766	2003	82	
Office	9.201.691	2018	20	
Office	6.931.010	2007	121	
Office	6.596.267	2009	62	
Office	4.734.413	1910	154	
Office	4.329.216	2005	155	
Office	3.993.328	1920	157	
Office	2.458.629	1998	75	
Office	283.059	2017	91	
Residential	101.080.687	1791-2009	30-99	  
Retail	58.962.932	1998	109	
Retail	50.000.000	2013	87	
Retail	2.682.405	1908	65	




As per 30 November 2021, the green bond asset pool comprised **44 properties**, 43 individual properties as well as 1 residential portfolio counted as one property. It accounts for € 1.3 billion in financings.

The **largest individual loan of € 101.1 million** finances a residential portfolio. Given the large number of buildings, the dispersion is considerable across all criteria: the properties were built between 1791 and 2009 (and partly refurbished), annual final energy consumption ranges from 30 to 99 kWh/m²/year and heating systems used are gas, electricity as well as near and long distance heating networks.

Slightly more than half of all assets in the pool were **built after 2008**. Older properties have in some cases been comprehensively refurbished.

Modern **logistics** properties naturally perform well in their final energy consumption given the nature of their usage. Office properties showed a broad span, and their energy consumption (as might be expected) usually rises with the age of the property.

**Heating systems** mainly rely on gas, with a share of around 50%, while all other fossil fuels are excluded by definition. One third of all properties are heated by means of near or long distance heating. Electricity as a heating source is mainly used in office properties.

 Gas  
 Electricity  
 Near and long distance heating