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# Green Bond - Allocation Report

## March 2023

### Green Bond Senior Preferred Benchmarks

ISIN	DE000A3H2ZX9	DE000A3T0X22	DE000A3T0X97	DE000A30WFV1	DE000A30WF43	DE000A30WF84
Issue Rating	BBB+ (S&P)					
Second Party Opinion	Cicero					
Coupon	0.10%	0.25%	0.25%	4.375%	7.625%	5.0%
Value Date	01.02.2021	27.10.2021	19.01.2022	29.08.2022	08.12.2022	06.02.2023
Maturity	02.02.2026	27.10.2025	17.01.2025	28.08.2026	08.12.2025	05.02.2027
Issue Size	€ 500 mn	€ 500 mn + € 200 mn tap	€ 750 mn	€ 500 mn	GBP 350 mn	€ 500 mn
Index Membership	Bloomberg MSCI Global Green Bond Index iBoxx Global Green, Social & Sustainable Bonds Index					



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# Business Model & Strategy

Dividend title with an attractive shareholder return and clear focus on Green transformation of the CRE sector

## Core Business

### Funding

- Strong capital market presence: benchmark issuances and private placements
- Resilient **Pfandbrief** as main funding source complemented by unsecured bonds
- pbb one of most active senior unsecured **Green Bond** issuers
- EUR and foreign currencies

pbb<sup>direkt</sup>

- Scalable **retail deposit** online-platform (pbb direkt)
- Call and term deposits (EUR, USD)

Specialized on-balance sheet lending ...



... based on stable, well diversified funding base



### CRE Lending

- Pfandbrief-eligible **senior loans**, complemented by limited non-senior loans
- **Structuring expertise** for complex/large transactions
  - ~ 150 deals per year
  - Ø deal size ~€ 50-70 mn
- **Green Loans** integral part of business model: **CRE transformation partner**

### USP

- **Leading specialized CRE bank** with conservative lending standards and **high-risk competence**
- **Strong franchise** with long-standing client relationships
- Local presence in core **Europe and the US**
- **Resilient Pfandbrief** as main funding source — in addition, **scalable retail deposit platform**

## New Business Lines

### RE Invest. Mgmt.

- Issuance of **open-ended real estate funds**
- **Capital-efficient** and **scalable** income source



### pbb Debt

- Provide required formats to **institutional investors** (e.g. debt funds)
- Leverage our extensive **market access**

### Green Consulting

- Advise on holistic solutions within the **green transformation of RE** (e.g. green development loans, green capex facilities)

### Strategy Update

- Maintain a **conservative risk profile** and retain **strict cost discipline**
- **Increase of profitability by growth** and **capital light strategic initiatives**
- **Sustainable finance** as an **important** contributor for **all growth initiatives**

# ESG Governance

ESG Program provides for holistic approach with clear responsibilities assigned – significant progress positively acknowledged by ECB

## ESG Programme



	2021	2022	02/23
ISS ESG	C Prime	C Prime	C Prime
MSCI	A	AA	AA
Moody's ESG Solutions	Score 43 (limited)	Score 44 (limited)	Score 50 (robust)

### – ESG at core of pbb's strategy:

- pbb can make a real difference, reducing the real estate sector's significant CO2 impact
- Green finance bank and transformation partner
- Active portfolio steering with initial roadmap to align CRE portfolio with Paris 1.5° C target by 2045/50

### – ESG risk structurally integrated in risk management landscape and overall business strategy

- Comprehensive monitoring of physical and transitional risks in REF exposure – portfolio & individual loan basis
- ESG risk assessment integral part of credit process

### – Comprehensive ESG programme implemented

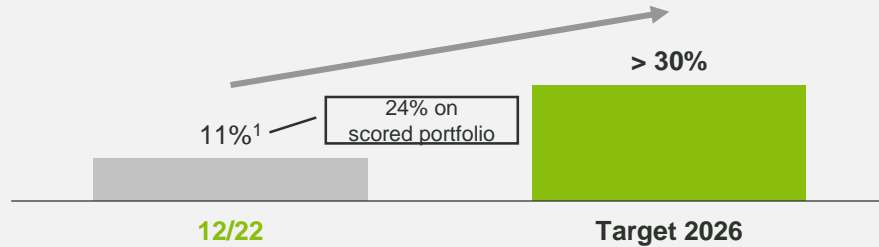
- Management Board responsibility – ESG targets part of remuneration
- Operationally, all ESG dimensions covered with clear responsibilities assigned

### – Progress acknowledged by regulator, ESG rating agencies and capital markets

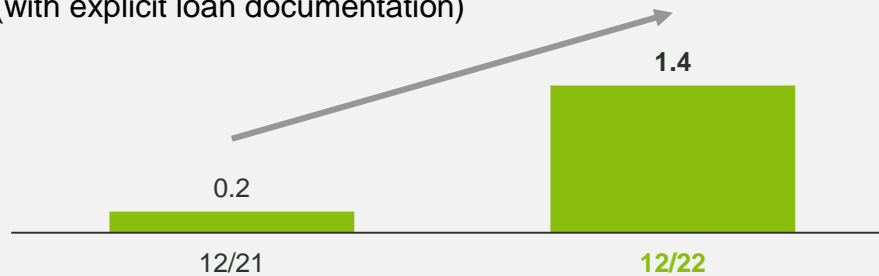
# ESG Ratings & Sustainable Finance

pbb as sustainable finance bank and transformation partner – > 30% green REF portfolio share targeted by 2026

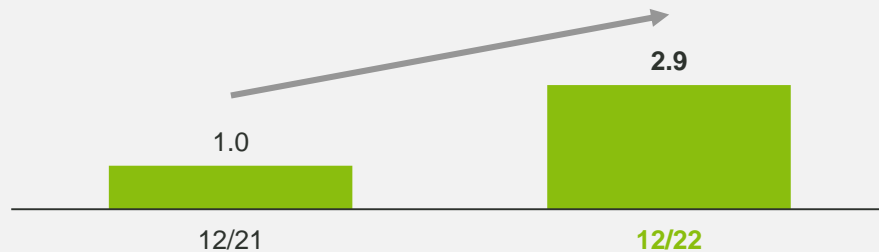
**Green share of REF portfolio** (green loan eligible assets)  
%



**Green Loans** (with explicit loan documentation)  
€ bn



**Green Bonds**  
€ bn



– **Sustainable finance defined as key element of pbb’s ESG strategy**

- Ambitious green new business and portfolio goals to become a driving force behind the green transformation of the real estate sector and grow the business
- Strong progress on ESG Data allows operationalised KPIs and KRIs to manage performance, risk and actively steer the portfolio
- pbb’s proprietary Green Tool systematically collects financed buildings CO<sub>2</sub> footprint and scores each buildings green content in alignment with EU Taxonomy
- 45% of REF portfolio scored – scoring of remaining portfolio ongoing
- Based on ESG Data, pbb is actively giving structured feedback to clients, a basis for intelligent transformation financing offers

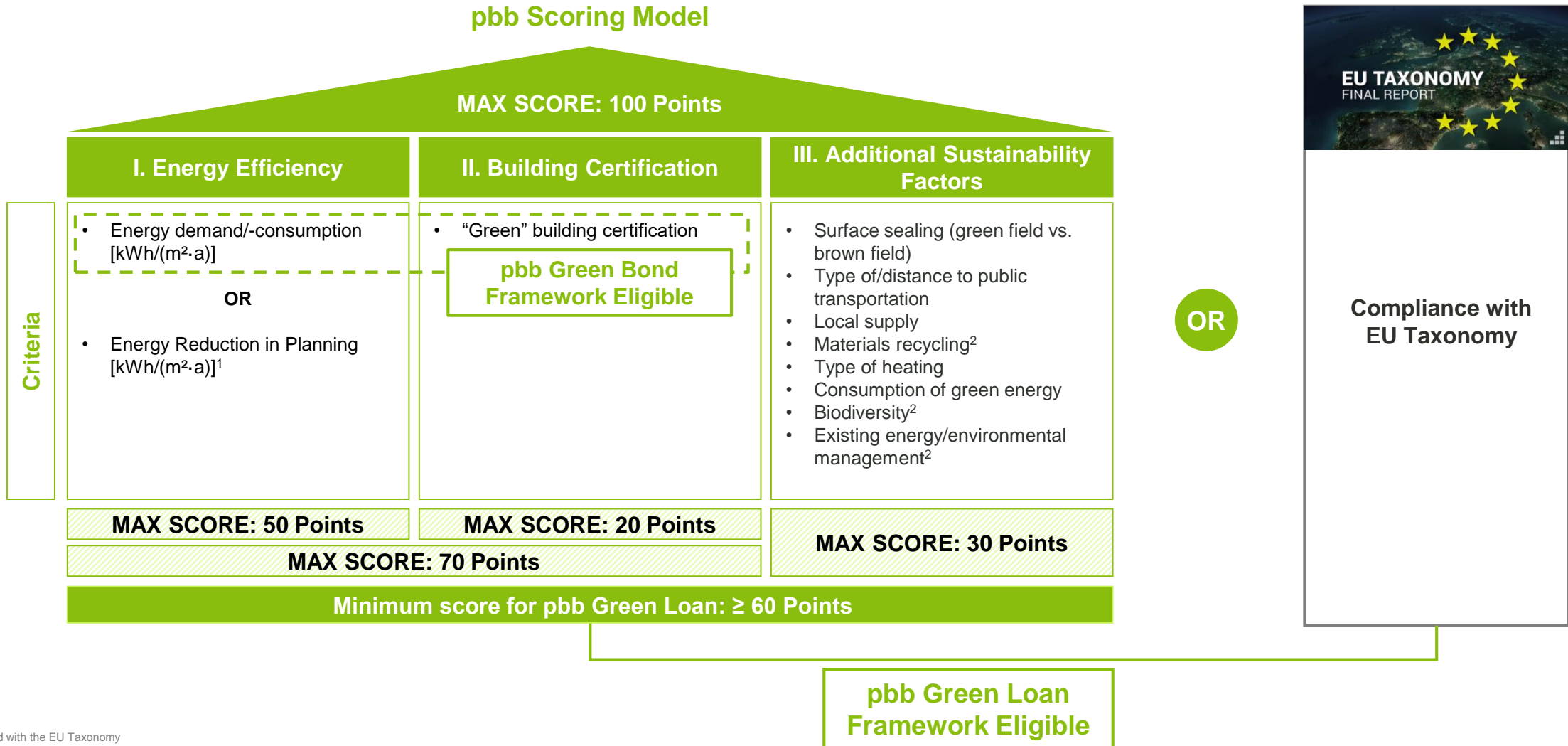
– **Strong progress in sustainable finance activities**

- Green share of total REF portfolio currently at 11% (24% based on scored portfolio of 45%) vs. 2026 target of >30%
- Customers increasingly accept explicit Green Loan documentation subject to respective reporting obligations
- pbb leading issuer of unsecured green bonds in the European market

1. Based on total REF portfolio; 24% based on scored REF portfolio of 45% as of 31 December 2022 / Green assets according to pbb’s green loan framework (Green loan eligible)

# Green Loan

pbb Green Loan Framework aligned with current regulatory and market developments  
 – specific metrics defined for each criteria



1. Aligned with the EU Taxonomy  
 2. Do Not Significant Harm Principles according to EU Taxonomy  
 Green Bond Allocation Report, March 2023

# ESG Ratings

## Continuous improvement reflected in ESG ratings – Upgrade by MSCI from “A” to “AA”

### ► pbb rating/score

ISS ESG	MSCI	Moody's ESG Solutions
LAST UPDATE: November 2022	LAST UPDATE: May 2022	LAST UPDATE: February 2023
A+	AAA (8.571 – 10.0)	80-100
A		
A-	AA (7.143 – 8.571) ► 7.9	
B+ Prime	A (5.714 – 7.143)	60-80
B		
B-	BBB (4.286 – 5.714)	40-60 ► 50
C+		
C ► 50.9	BB (2.857 – 4.286)	
C-		20-40
D+	B (1.429 – 2.857)	
D		
D-	CCC (0.0 - 1.429)	0-20

- “Prime” Rating since initiation in 2012

- Second-best rating on MSCI rating scale
- Upgrade to from “A” to „AA“ in 03/22

- Score improved to 50 from 44 (scale of 100) in 02/23

- Continuous improvement of ESG organisational set-up, governance, strategy and operative integration reflected in above average ESG ratings
- Upgrade by MSCI from „A“ to „AA“ mainly reflects strongly increased Environmental score
- Recent upgrade from score increase at Moody's ESG Solutions from „Limited“ to „Robust“ (02/23)
- ISS ESG confirms „Very High“ transparency level
- No involvement in controversial activities identified by agencies depicted



# Green Bond – Second Party Opinion

## Second Party Opinion & External Review by Cicero Shades of Green (CICERO Light Green)



- CICERO Shades of Green provided the [Second Party Opinion](#) on pbb's Green Bond Framework and related policies.
- CICERO Shades of Green also provides an annual independent review of pbb's Green Bond Reporting. The [first review](#) was published in January 2022.
- Both documents are available on pbb's website.



CICERO  
Shades of  
Green

### Deutsche Pfandbriefbank AG Green Bond Second Opinion

April 28, 2020

Deutsche Pfandbriefbank AG ("pbb") is a bank specialized in real estate and public investment finance. pbb has its headquarter in Garching, Germany and has additional offices in the United Kingdom, France, Sweden, Spain and the United States. The issuer is one of the largest issuers in the Pfandbriefe market with an outstanding volume of approx. EUR 30 billion. Around 50% of pbb's assets are located in Germany.

pbb's green bond framework lists only green buildings as an eligible project category in accordance to the Green Bond Principles. pbb informed us that approximately 80-85% of proceeds are expected to be allocated to refinancing of existing buildings and 15-20% will be used for financing of new loans for existing buildings mainly in Poland, Germany, France, UK, Netherlands and Austria that either meet a minimum certification of LEED Gold (or equivalent) or absolute minimum energy consumption thresholds defined by pbb's framework that applies to all jurisdictions of pbb's business activities. pbb excludes financing of outdated/inefficient heating systems, which excludes, e.g., oil based heating, but could include other fossil fuel heating such as natural gas based heating sources.

The issuer is in the process of rolling out a green loan system and to raise environmentally relevant data for all of its buildings. The issuer informed us that this framework provides a test case for the bank and that the framework is expected to be improved and tightened regarding its eligibility criteria over time. pbb will obtain an external review for its impact reporting.

pbb's framework does not exclude fossil fuel-based heating and could allow for financing or refinancing that reach minimum certification levels, but do not align with specific energy efficiency thresholds. In addition, pbb does not yet systematically assess climate related risks and has not yet implemented TCFD recommendations. It is the responsibility of the issuer and specifically pbb's green bond committee to ensure that green buildings exceed local regulations and ensure low-carbon impact and climate resilience of the buildings.

Based on the overall assessment of the project types that will be financed by the green bonds, governance and transparency considerations, pbb's green bond framework receives a **CICERO Light Green** shading and a governance score of **Good**. The framework would benefit from excluding fossil fuel based heat sources and adding additional requirements for eligible new loans such as low carbon transport access, higher certification levels, climate resilience as well as construction material considerations and construction emissions.

**SHADES OF GREEN**  
Based on our review, we rate the pbb's green bond framework **CICERO Light Green**.

Included in the overall shading is an assessment of the governance structure of the green bond framework. CICERO Shades of Green finds the governance procedures in pbb's framework to be **Good**.




**GREEN BOND PRINCIPLES**  
Based on this review, this Framework is found in alignment with the principles.



CICERO  
Light Green

\*Second Opinion\* on pbb's Green Bond Framework

1



CICERO  
Shades of  
Green

### Deutsche Pfandbriefbank AG (pbb) External Review of 2021 Green Bond Reporting

January 27, 2022

CICERO Green has reviewed Deutsche Pfandbriefbank AG's (pbb) 2021 Green Bond Report. We review project allocation against framework criteria and impact metrics for relevance and transparency.

CICERO Green finds no discrepancies in our review of the reporting against pbb's Green Bond Framework. We particularly welcome that all projects that have environmental certifications also satisfy the Green Bond Framework's energy performance criteria. pbb reports avoided emissions, which is a relevant impact indicator for green buildings and pbb has shown commitment to transparency by detailing its methodology and pro-rating impacts per EUR 1 million of green bond proceeds.

**Project allocation**  
pbb reports on its green bond portfolio as at November 2021.

We assigned an overall shading of Light Green to pbb's Green Bond Framework in our Second Opinion dated April 28, 2020.<sup>1</sup> Green buildings was the only project category included in pbb's Green Bond Framework – specifically, proceeds would finance or re-finance loans extended in respect of green buildings (green loans). This project category also received a Light Green shading, and all proceeds have been allocated to this category (see Figure 1). For a more detailed review of pbb's allocation, see Table 1.

pbb's Green Bond Report satisfies the commitments in respect of allocation reporting contained in its Green Bond Framework. The Green Bond Report sets out the following, for example:

- that the outstanding value of green bonds at 30 November 2021 was EUR 1 billion
- furthermore, that as of 30 November 2021, pbb's green bond portfolio consisted of approximately EUR 1.3 billion of eligible green loans, exceeding the amount of the bonds
- list of properties in the portfolio
- information on the construction year and energy use (in kWh/m<sup>2</sup> p.a) of the properties in the portfolio

The largest loan pbb includes in its list of properties is for a residential portfolio, for which pbb provides the range of construction years and final energy consumption, as well as the different heating systems in place. pbb informed us these properties were not listed individually because they consist of large number of comparatively low value loans, though it confirmed that each individual building satisfied the Green Bond Framework criteria. pbb's approach to these residential properties provides less transparency than for the rest of the portfolio, for example investors cannot calculate the share of residential buildings with a certain heating type.

pbb states that buildings were only selected based on energy use and not on environmental certifications. This is in accordance with pbb's statement during the SPO process that it would likely screen out buildings with environmental certifications but high energy consumption, and we welcome that pbb has implemented the Green Bond Framework in this way. Nonetheless, pbb may in the future consider including a breakdown of environmental certifications as this may add value for investors.

<sup>1</sup> [https://pub.cicero.oslo.no/cicero-xmlui/bitstream/handle/11250/2720290/Cicero\\_Second\\_Opinion\\_for\\_pbb.pdf](https://pub.cicero.oslo.no/cicero-xmlui/bitstream/handle/11250/2720290/Cicero_Second_Opinion_for_pbb.pdf)

External Review of 2021 Green Bond Report

1



# Allocation Report: Green Bond – Reference Portfolio

## Preliminary Impact Reporting based on current portfolio

### Carbon Impact Figures

Main building type	Carbon Emissions of heating & electricity (kgCO <sub>2</sub> /m <sup>2</sup> /year)	Energy Demand Baseline (kWh/m <sup>2</sup> /year)	Emission Factor (kgCO <sub>2</sub> /kWh)	Carbon Emission Benchmark (kgCO <sub>2</sub> /m <sup>2</sup> /year)	Carbon Savings (kgCO <sub>2</sub> /m <sup>2</sup> /year)	Total Carbon Savings (tCO <sub>2</sub> /year)	Financed Carbon Savings (tCO <sub>2</sub> /year)
Building 1	EPC	Local average	Local energy mix	EDB x EF	CEB - CE	CS x Area	TCS x pbb financing share
<b>Total</b>						<b>XXX</b>	<b>XXX</b>

**pbb Green Bond Carbon Impact: 40,190 tCO<sub>2</sub>/year**

### Carbon impact assessment methodology

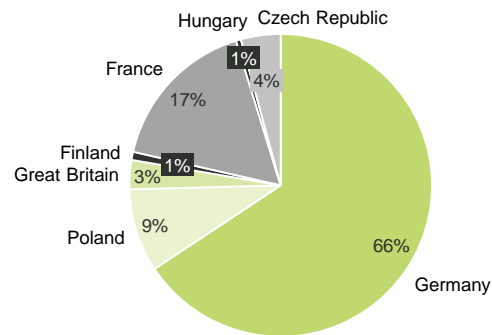
- pbb estimates the carbon impact of its Green Bond Assets portfolio on a line by line basis
- pbb collects the carbon emission intensity for each building from its Energy Performance Certificates (EPCs)
- If carbon emissions are not included in the EPC, energy demand figures are translated to carbon emissions via applicable emission factors for heating (sources: GEG 9 – German building energy law) and electricity (source: European Environment Agency)
- The benchmark is the average energy demand by type of use in specific locations from PCAF (Partnership for Carbon Accounting Financials). (<https://carbonaccountingfinancials.com/about>). In last quarter's report we used ENTRANZE values as benchmark. In order to tighten the benchmark, we decided to use PCAF which provides more recent values.

As of	Outstanding nominal amount in the potential Green Portfolio (€ mn)	No. of Green Buildings	Total floor area (m <sup>2</sup> )	Carbon savings - pbb financing share (tCO <sub>2</sub> /year)	Carbon savings - pbb financing share (tCO <sub>2</sub> /€ 1mn)
03/2023	~3,959	174	~3.0 mn	~40,000	~10

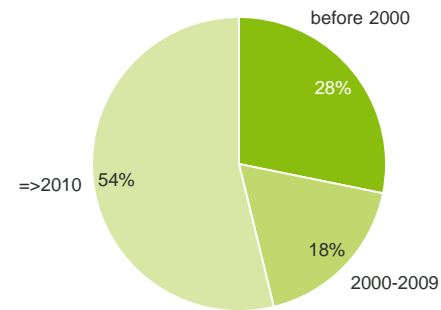
# Allocation Report: Green Bond – Reference Portfolio

Reference Portfolio: approx. € 3.95 bn as of 03/2023

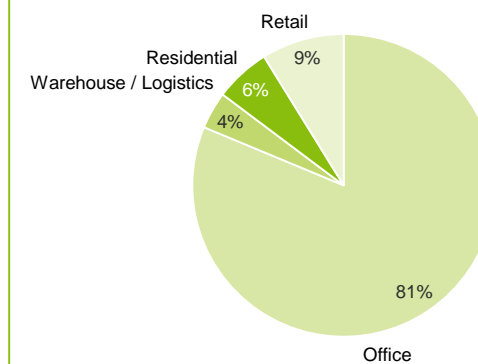
**Breakdown by regions (€ mn)**



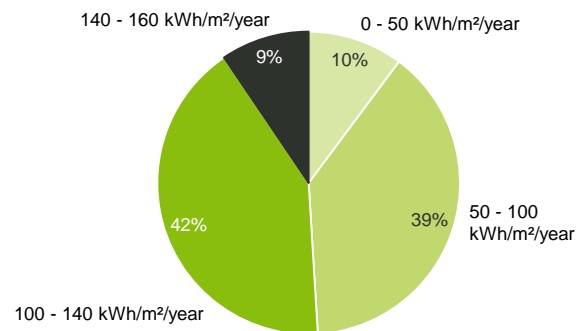
**Breakdown by year of construction (€ mn)**



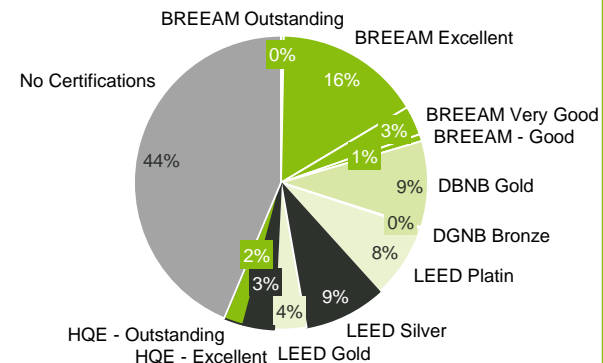
**Breakdown by property type (€ mn)**



**Breakdown by final energy consumption (€ mn)**



**Breakdown by green certifications (€ mn)**



- **Portfolio** consisting of ~ € 3.95 bn.
- Portfolio will change over time
- Process for **recording the criteria** of the overall portfolio established:
  - Recording of all properties of the new business
  - Recording of the already existing portfolio as part of the regular monitoring process

# Green Bond – Reference Portfolio

## Examples of Green Assets: Project „Optineo“, Werksviertel, Munich



### Building

- Two components: high rise & low rise
- High rise: 18 and 5 storeys partly
- 24,000 m<sup>2</sup> gross floor area, 299 parking units
- Gastronomy on the ground floor

### Green

- A groundwater geothermal plant
- Photovoltaic systems produce electricity
- Operation of heat pumps
- Electromobility infrastructure in the neighbourhood

### Standards

- LEED Gold (pre-check)
- KfW-55 standard
- Green Scoring 82

