

Green Bond - Allocation Report

July 2023

Green Bond Senior Preferred Benchmarks						
ISIN	DE000A3H2ZX9	DE000A3T0X22	DE000A3T0X97	DE000A30WV1	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
Outstanding Amount	In total € 3.134 bn					
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^{direkt}

- 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 Ratings

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



	2021	2022	06/23
ISS ESG	C Prime	C Prime	C Prime
MSCI	A	AA	AA
Moody's ESG Solutions	Score 43	Score 44	Score 50

– 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 clear 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

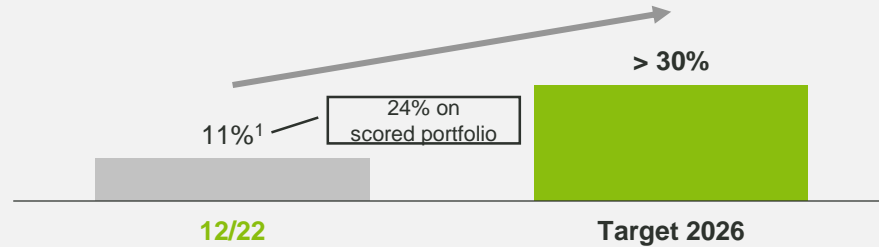
- Management Board responsibility – ESG targets part of remuneration
- Operationally, all ESG dimensions covered with clear responsibilities assigned

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

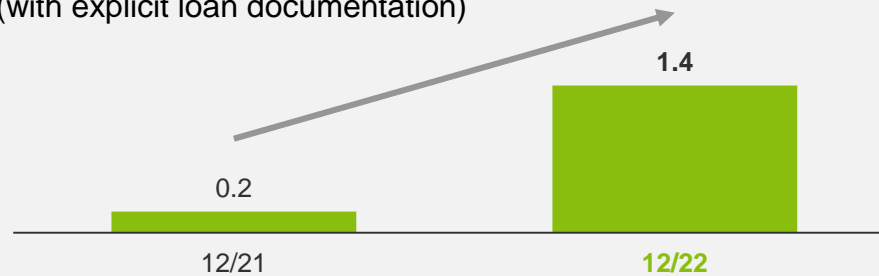
Sustainable Finance

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

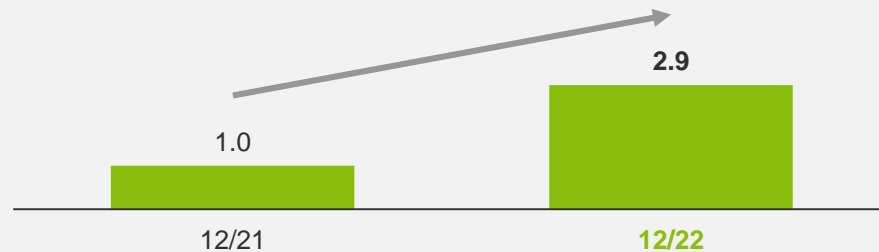
Green share of REF portfolio (green loan eligible assets) %



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 CO₂ 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

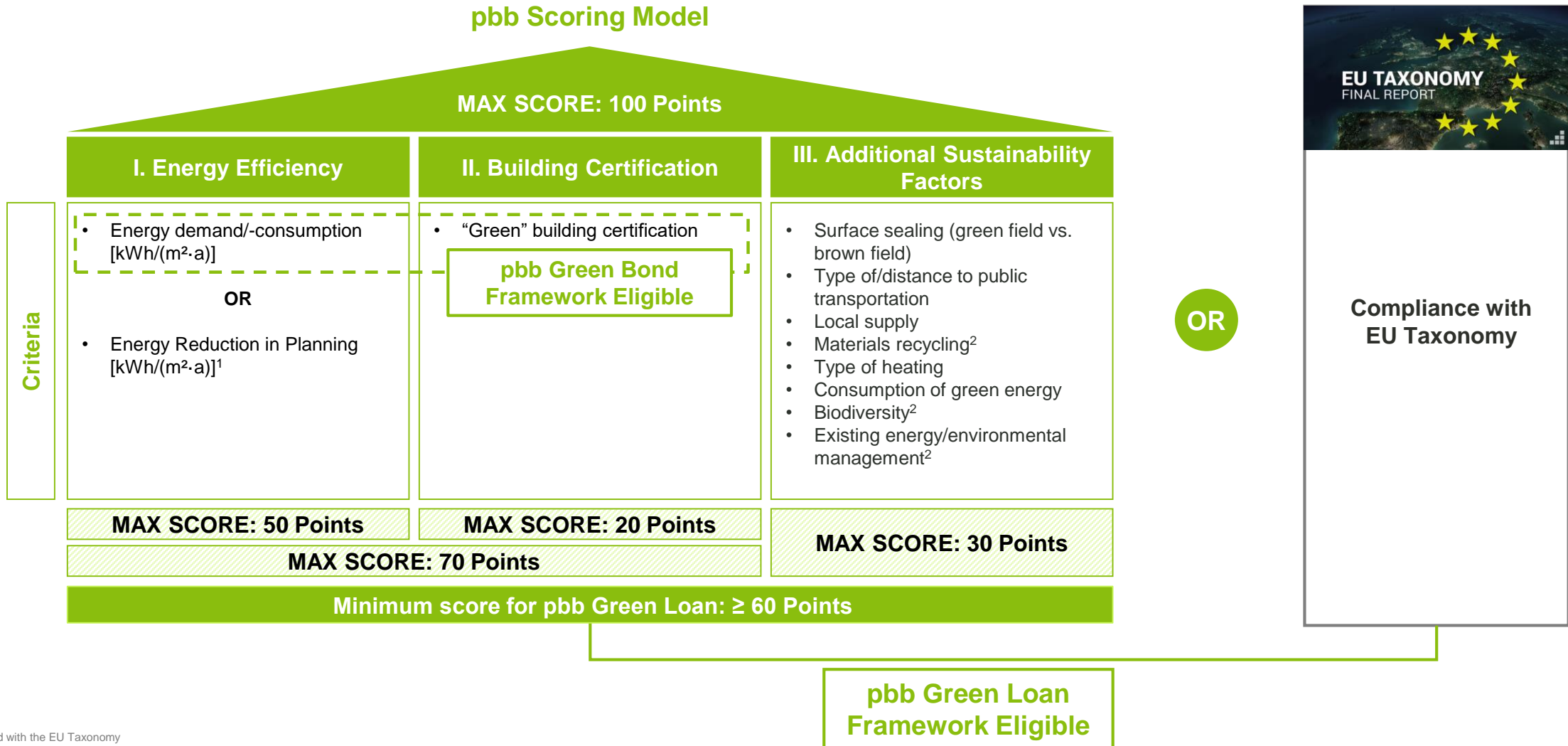
– Strong progress in sustainable finance activities

- 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 – Second Party Opinion

Last 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. The most recent framework was published in March 2023
- CICERO Shades of Green also provided the last annual independent review of pbb's [Green Bond Report](#) in January 2023.
- pbb publishes all reports [here](#).



CICERO Shades of Green now a part of **S&P Global**

Deutsche Pfandbriefbank AG Green Bond Second Opinion

27 April 2023

Executive Summary
Deutsche Pfandbriefbank AG ("pbb") is a German-headquartered bank specializing in commercial real estate. Around half of pbb's assets are in Germany, though it is also active in western and central Europe and the USA, and it is one of the largest issuers in the 'Pfandbriefe' market, with an outstanding volume of approximately EUR 25 billion.

Under its framework, pbb will finance or refinance loans in respect of the construction of buildings (built in 2021 or later), the acquisition and ownership of existing buildings (built prior to 2021), and refurbishment investments. The largest share of proceeds is expected to be allocated to existing buildings, while office buildings are expected to be the most commonly financed building type. Though the framework contains no geographical limits, pbb currently only finances projects in western and central Europe and expects the majority of projects to be in Germany. This is an update of pbb's framework dated March 2020. The main changes are to the eligibility criteria, including the introduction of separate criteria for buildings built before and from 2021, criteria reflecting the EU Taxonomy's substantial contribution to climate change mitigation criteria, and criteria for financing refurbishments.

We rate the framework **CICERO Light Green** and give it a governance score of **Excellent**. The Light Green shading primarily reflects the moderate ambition of the criteria for new buildings and that, for existing buildings, the same energy consumption thresholds apply across jurisdictions and will therefore be of varying ambition. In terms of governance, pbb has positively developed many elements of its climate and environmental approaches since its previous framework, has a track record of transparent green bond reporting, and retains a solid selection process.

Strengths
pbb has developed a sustainability scoring model, which will lead to additional climate and environmental factors being considered in the selection of eligible loans under the framework. As part of its green loan product, pbb has developed a sustainability scoring model, which it also applies to all lending to evaluate a building's sustainability. The model includes consideration of energy use, environmental certifications, and additional factors including availability of distance to public transport, use of recycled materials in construction, heating type, and use of green electricity. pbb has confirmed that investments under the framework will be scored according to the model and the factors considered holistically, thereby bringing them into the selection process.

Among others, the framework excludes buildings with substantial negative impact on the environment or a concentration of tenants with an unacceptable environmental impact. Examples of the former include new

¹Second Opinion on pbb's Green Bond Framework



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Deutsche Pfandbriefbank AG (pbb) External Review of Green Bond Impact Report 2022

23 January 2023

CICERO Shades of Green has reviewed pbb's Green Bond Impact Report 2022 ("Report"). We review allocation against pbb's Green Bond Framework (dated March 2020, the "Framework") criteria, and impact metrics for relevance and transparency.

We consider that the allocations considered in the Report align with the Framework and that the Report utilizes a relevant and sufficiently transparent impact metric. Moreover, we consider the Report aligns with the core principles and recommendations contained in ICMA's Handbook – Harmonized Framework for Impact Reporting (June 2022),¹ though more specific information on emissions factors could be included.

Project allocation
As at 30 November, pbb had outstanding green bonds totaling EUR 2.45 billion.

In respect of allocation, CICERO Shades of Green considers the Report aligned with the Framework; for a more detailed review, please see Appendix 1.

pbb reports on its green bond portfolio as at 30 November 2022, which totals approximately EUR 3 billion in green loans. pbb continues to rely exclusively on the Framework's energy performance criteria when selecting projects for its green bond portfolio. It has, however, developed a scoring model for its green loans, which, on top of energy criteria, also factors in environmental certifications and other sustainability factors.² Given the number of factors that contribute to a building's climate performance, these additional considerations are welcome. pbb also informed us that its green bond committee also discusses tenants' business operations in the selection process.

For the purposes of its allocation reporting, pbb includes a residential portfolio, consisting of 82 properties. According to pbb, these properties are not listed individually because they consist of a large number of comparatively small size, though each individual building satisfies the Framework criteria.

The Framework was assigned an overall Light Green in our Second Party Opinion.³ The Framework included only one project category, green buildings, where proceeds would finance or re-finance loans extended in respect of such buildings. This project category also received a Light Green shading, and all proceeds have necessarily been allocated to this category (see Figure 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 ₂ /m ² /year)	Energy Demand Baseline (kWh/m ² /year)	Emission Factor (kgCO ₂ /kWh)	Carbon Emission Benchmark (kgCO ₂ /m ² /year)	Carbon Savings (kgCO ₂ /m ² /year)	Total Carbon Savings (tCO ₂ /year)	Financed Carbon Savings (tCO ₂ /year)
Building 1	EPC	Local average	Local energy mix	EDB x EF	CEB - CE	CS x Area	TCS x pbb financing share
Total						XXX	XXX

pbb Green Bond Carbon Impact: 49,274 tCO₂/year

Carbon impact assessment methodology

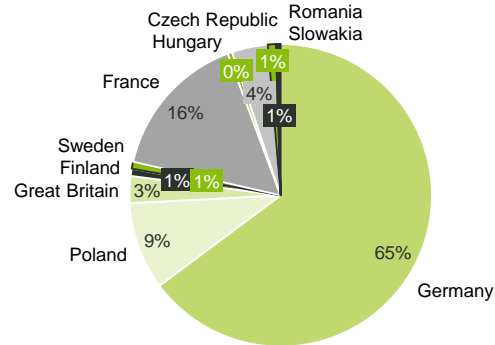
- pbb estimates the carbon impact of its Green Bond Assets portfolio on a line by line basis
- pbb collects the carbon emission intensity for each building from its Energy Performance Certificates (EPCs)
- If carbon emissions are not included in the EPC, energy demand figures are translated to carbon 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 last year'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 ²)	Carbon savings - pbb financing share (tCO ₂ /year)	Carbon savings - pbb financing share (tCO ₂ /€ 1mn)
07/2023	~4,359	183	~3.3 mn	~49,000	~11

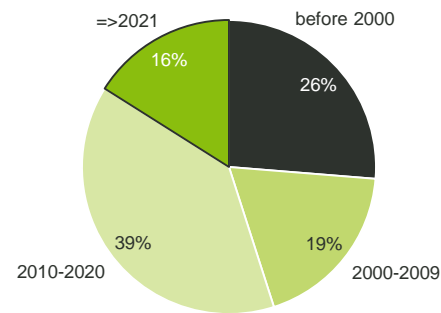
Allocation Report: Green Bond – Reference Portfolio

Reference Portfolio: approx. € 4.36 bn as of 07/2023

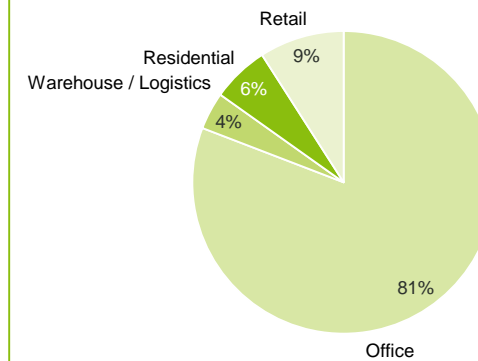
Breakdown by regions (€ mn)



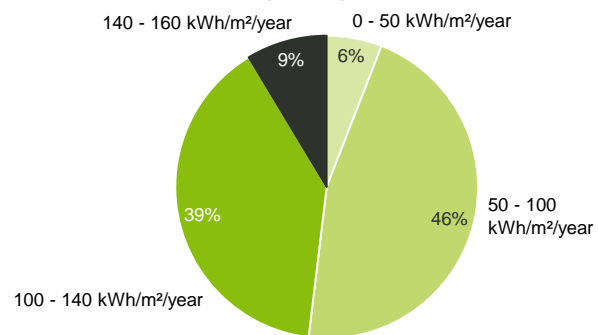
Breakdown by year of construction (€ mn)



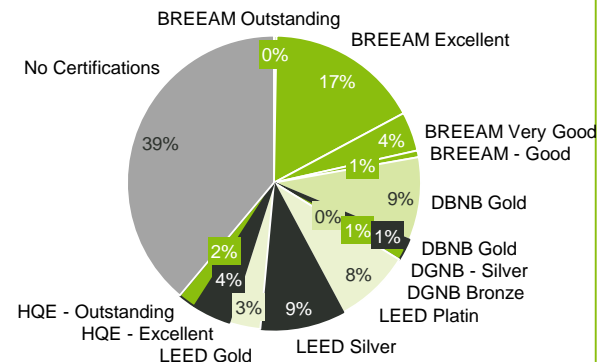
Breakdown by property type (€ mn)



Breakdown by final energy consumption (€ mn)



Breakdown by green certifications (€ mn)



- **Portfolio** consisting of ~ € 4.36 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 m² 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

