

## Foreword of the Board of Management



#### Dear Sir or Madam,

Today we are presenting our ESG Bond Report 2022, which we have never published in this form before. Since 2016, we have been publishing an annual report on our Green Bonds. In 2022, we reported for the first time on the development of our strategic KPI for our Sustainability-Linked Bond. Shortly thereafter, we published our Social Bond Framework and issued our first Social Pfandbrief. Therefore, we will also publish a Social Bond Report for the first time this year. At the same time, we decided to bring together the reports on all – now three – different types of ESG bonds that Berlin Hyp issues in a single publication.

The issuance of our first Social Pfandbrief plays a key role in the holistic nature of Berlin Hyp's ESG strategy, a bank which many business partners, capital market investors and other stakeholders have regarded in the past as a "green bank" and a pioneer in corresponding capital market products. Accordingly, we have repeatedly been able to set green accents in our lending business; most recently in the year under review, when we successfully launched three new labeled green loan products under our new Sustainable Finance Framework: our taxonomy loan, the energy efficiency loan and the transformation loan. On the other hand, social aspects were of great importance, especially within the bank and in the business relationships with our customers and suppliers. However, we were not able to offer any special products. With our Social Bond Framework, we managed to close this gap in 2022.

It was important to us that a social refinancing instrument from Berlin Hyp also keeps an eye on preventing adverse effects on climate and the environment. The next step in this regard will be the rollout of our new Social Loan, whose criteria are in line with those of our Social Bonds and thus focuses on the issue of affordable housing.

Last year we were also able to achieve important milestones in the E within ESG. We successfully settled the first taxonomy loans with customers. These are about real estate or development financing that not only meet the technical screening criteria of the EU taxonomy, but also its Do-No-Significant-Harm criteria and Minimum Social Safeguards. We made further progress in decarbonizing our entire loan portfolio in 2022 and were able to reduce its  $\mathrm{CO}_2$  intensity by 9.72 percent compared to the base year 2020. We are very happy about that. At the same time, we know that Russia's war in Ukraine and the resulting current changes in the energy mix of Germany and other European countries will not make it easier to achieve our 40 percent reduction target by 2030.

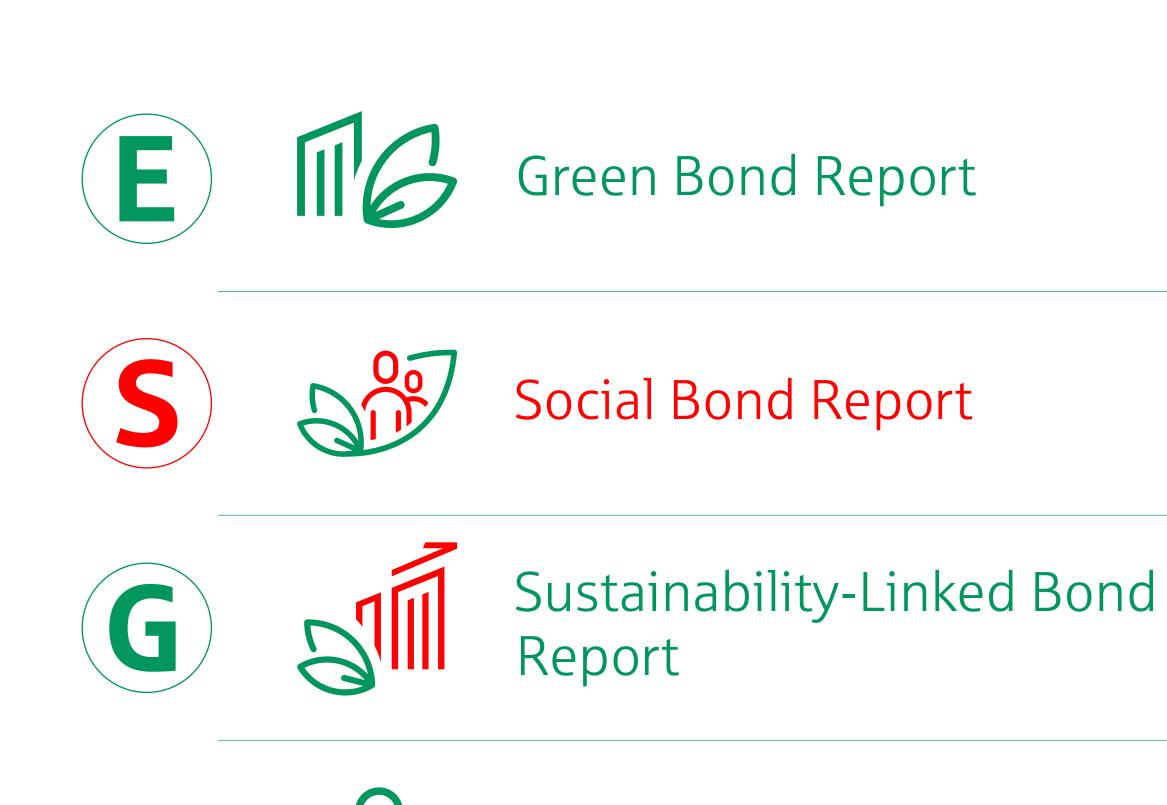
I hope you enjoy reading our first ESG Bond Report and would like to ask for your feedback. Of course we are happy about every compliment. Critical comments about the new format are just as welcome. Because they help us to deliver exactly what is helpful for you.

With kind regards

Maria Teresa Dreo-Tempsch

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#### A company of LBBW

# Berlin Hyp



# Berlin Hyp's Green Bonds

A sustainable investment

www.berlinhyp.de/en/investors/green-bonds







# A-Portfolio Highlights 2022

Volume Green Finance Portfolio

**8,855**€mn

Green new business

**1,447** € mn

thereof EU-Taxonomy loans (valued)

**89** € mn

Number of green buildings

386

Green Buildings area

**6,400,944** m<sup>2</sup>

CO<sub>2</sub> savings

**6.53 – 13.57** tCO<sub>2</sub> / € mn / a

CO<sub>2</sub> emissions (Share/Total)

**63,888/115,000** tCO<sub>2</sub>/a

Average energy demand 90 kWh/m²/a

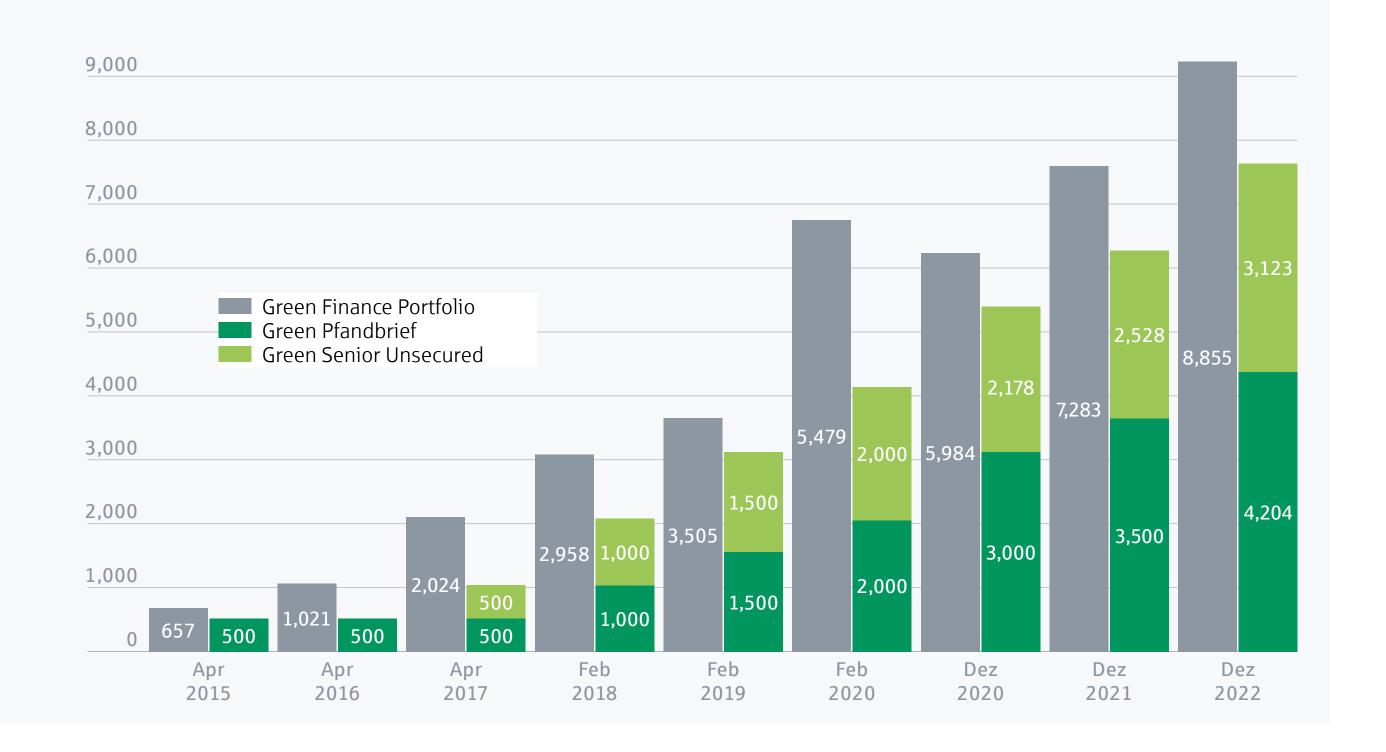
## **B.1** – Allocation Report: Green Finance Portfolio

### Green Finance Portfolio grows to € 8.86 billion





Development Green Finance Portfolio		
€million	Total	Number of Green Buildings
Total by 31 December 2021	7,283	312
Valued new business for new green buildings	1,013	41
Difference from subsequently identified green buildings and repayments	425	33
Total by 31 December 2022	8,855	386



In the reporting period from 1 January 2022 to 31 December 2022, green new business of € 1,447 million was achieved. Of this, a total of € 1,013 million was disbursed for 41 new green buildings. These buildings are presented line-by-line in the appendix. A further € 425 million came from drawings on additional loan tranches from loans for green buildings previously financed by the bank or subsequently identified.

The Green Finance Portfolio grew by a total of € 1,572 million to € 8,855 million (PY: € 7,283 million) and includes financing for 386 green buildings.

At € 5,060 million, around 57 percent of the portfolio is part of the mortgage cover pool. Measured against the Bank's total portfolio, around 28 percent (PY: 24 percent) of all financings are classified as green as of the reporting date. The Bank's goal is to increase the share of green building to one third by 2025.

For the first time, two percent of the Green Finance Portfolio qualifies via the complete EU taxonomy criteria. 19 percent are based on very good sustainability certificates and 79 percent meet the strict energy threshold criteria.

#### **Breakdown of Green Finance Portfolio According to Eligibility Criteria**

Sustainability Certificate 19 % 2 % EU Taxonomy

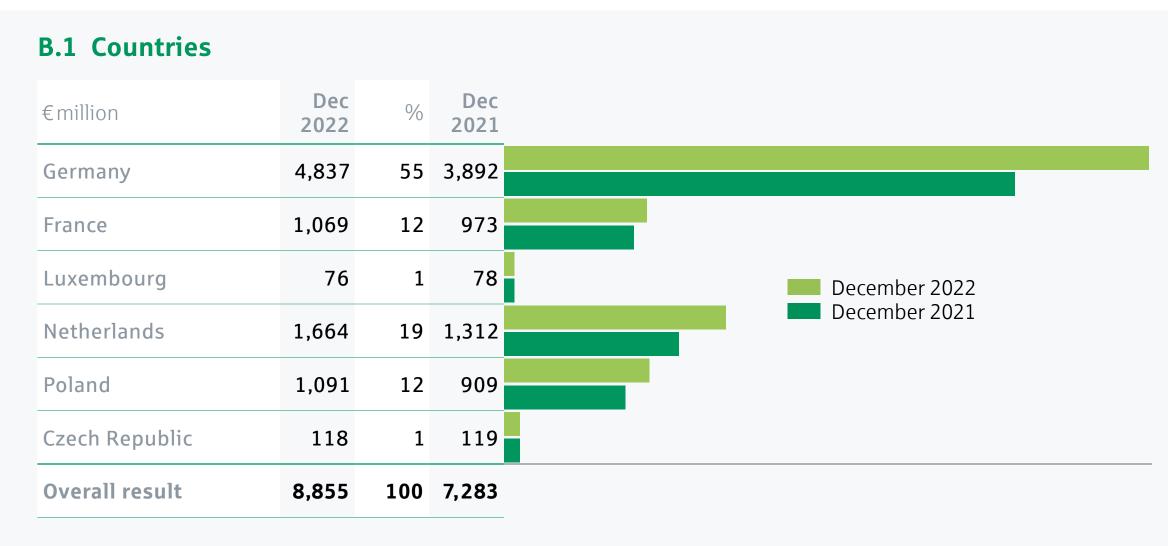


**79**% Energy Performance Certificate



# **B.1** – Allocation Report: Green Finance Portfolio

Green office financing expanded in particular in Germany



#### **B.2** Type of Use

€million	Dec 2022	%	Dec 2021
Office building	6,355	72	5,273
Retail	1,010	11	815
Logistics	303	3	306
Logistics – Light Industrial	140	2	155
Management / social real estate	309	3	203
Residential	737	8	531
Overall result	8,855	100	7,283

#### **B.3 Maturity Structure**

Emillion	Dec 2022	%	Dec 2021
≤ 6 months	591	7	165
6 months to 1 year	490	6	615
1 year to 1,5 years	741	8	344
1,5 years to 2 years	569	6	441
2 years to 3 years	1,110	13	1,006
3 years to 4 years	1,213	14	912
4 years to 5 years	965	11	1,046
5 years to 10 years	3,124	35	2,700
over 10 years	53	1	54
Overall result	8,855	100	7,283

#### **B.4 Certificates**

€million	Dec 2022	%	Dec 2021
BREEAM Excellent	200	2	346
BREEAM Very Good	342	4	200
DGNB Platinum	70	1	178
DGNB Gold	460	5	480
HQE Exceptionelle	70	1	0
LEED Gold	403	5	289
LEED Platinum	165	2	135
EPC	7,146	81	5,555
Overall result	8,855	100	7,283

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# **B.1** – Allocation Report: Green Finance Portfolio

### Outstanding Green Bonds with a volume of 7.3 billion Euros

#### **Outstanding Green Bonds as at 31 December 2022**

A-Portfolio Highlights

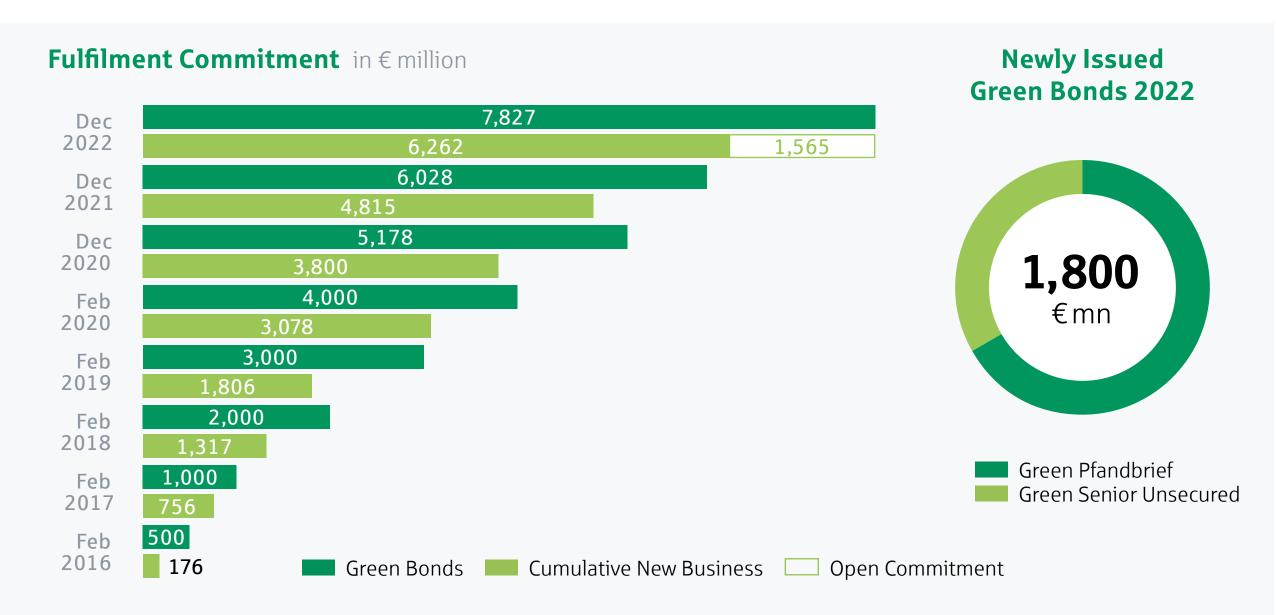
ISIN	Asset class	Issue date	Maturity	Currency	<b>Issue volume</b> in € mn
DE000BHY0GU5	Senior	26.09.2016	26.09.2023	EUR	500
DE000BHY0GH2	Mortgage Pfandbrief	14.06.2017	23.10.2023	EUR	500
DE000BHY0GS9	Senior	24.10.2017	25.10.2027	EUR	500
DE000BHY0GB5	Senior	17.04.2018	18.04.2028	EUR	500
DE000BHY0GC3	Mortgage Pfandbrief	22.10.2018	22.10.2025	EUR	500
DE000BHY0GL4	Mortgage Pfandbrief	17.07.2019	19.07.2027	EUR	500
DE000BHY0GA7	Senior	04.11.2019	05.11.2029	EUR	500
DE000BHY0HF4	Senior	28.04.2020	28.06.2023	EUR	35
601092700	Senior	30.04.2020	30.04.2030	EUR	27
DE000BHY0GD1	Mortgage Pfandbrief	07.07.2020	07.07.2028	EUR	500
DE000BHY0GX9	Mortgage Pfandbrief	02.09.2020	02.09.2030	EUR	500
CH0561923852	Senior	11.09.2020	11.09.2028	CHF	169
CH0598928742	Senior	10.03.2021	10.03.2031	CHF	115
DE000BHY0GE9	Mortgage Pfandbrief	24.03.2021	24.01.2028	EUR	500
CH1135555592	Senior	04.10.2021	04.10.2029	CHF	183
DE000BHY0GN0	Senior	25.01.2022	25.01.2027	EUR	500
CH1163572915	Senior	21.02.2022	21.02.2025	CHF	95
CH1202242249	Mortgage Pfandbrief	04.08.2022	04.08.2026	CHF	204
DE000BHY0GK6	Mortgage Pfandbrief	25.08.2022	25.08.2025	EUR	1,000
Total					7,327



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# **B.2** – Allocation Report: New Lending

#### New Green Bonds issued with a volume of 1.8 billion Euros



#### **New Issuance Green Bonds in 2022**

Rank	Value date	Maturity	Currency	<b>Size</b> in € mn
Senior	25.01.2022	25.01.2027	EUR	500
Senior	21.02.2022	21.02.2025	CHF	95
Pfandbrief	04.08.2022	04.08.2026	CHF	204
Pfandbrief	25.08.2022	25.08.2025	EUR	1,000

#### **Outstanding Green Commercial Paper**

Rank	Value date	Maturity	Currency	<b>Size</b> in € mn
СР	23.05.2022	23.02.2023	EUR	20
СР	30.09.2022	28.02.2023	USD	10
СР	12.12.2022	13.02.2023	EUR	100
СР	12.12.2022	10.03.2023	EUR	40

With the revision of Berlin Hyp's Green Bond Framework, the Bank initiated an ambitious path to integrate the EU taxonomy step by step. Berlin Hyp aims to have 100 percent of eligible business in accordance with its Green Bond Framework in line with the EU taxonomy by 2026. Berlin Hyp was able to slightly exceed its self-imposed target of issuing five percent of green new business in line with the taxonomy in the first year. In 2022, the Bank issued taxonomy loans in an amount of over €89 million. This corresponds to a share of six percent of total green new business (€1,447 million).

Since the issuance of the first Green Pfandbrief, Berlin Hyp has pursued a best-effort approach. The Bank strives to do its utmost to invest the issuance proceeds of its Green Bond in new green loans during their term. This is in addition to using the proceeds for refinancing eligible green assets already originated in advance.

Within the reporting period, Berlin Hyp issued a total of four green benchmark bonds with a volume of € 1,800 million on the market. These were divided into two Pfandbriefe and two Senior Preferred bonds, one of each denominated in Swiss Francs and in Euros. Berlin Hyp celebrated two debuts in the Pfandbrief segment.

Firstly, it issued its first green CHF Pfandbrief, and secondly, it issued its first Green Pfandbrief in jumbo format (e.g. with a transaction size of at least € 1 billion). With 17 outstanding benchmark bonds, Berlin Hyp thus remains the most active issuer of green bonds in Europe in the commercial bank segment. In addition, as of the reporting date, the Bank has four green commercial papers outstanding in the amount of € 170 million, which were issued in both, Euros and US Dollar.

In the reporting year, green new lending of €1,447 million was achieved. The chart on the left-hand side shows that since the first Green Pfandbrief was issued in 2015, €6,262 million have already been invested in new loans for green buildings. Accordingly, €1,565 million are currently still required to fulfil the commitment from all Green Bonds issued to date. As of the reporting date, this volume amounts to €7.827 million and includes not only the outstanding green bonds but also bonds that have already matured.

A list of the newly financed green buildings in the portfolio is shown in the appendix.



# **C-Impact Reporting**

#### Introduction of a new benchmark

The impact of Berlin Hyp's Green Bonds was again calculated by Drees & Sommer. The methodology corresponds to that of previous years and is presented in the appendix, along with the data used. Two benchmarks were used to calculate the CO<sub>2</sub> emissions avoided. First the current energy reference value for various property classes according to the requirements of the Energy Saving Regulation (EnEV reference values), already known from our previous Green Bond Reports, and secondly, an average energy reference value for German properties. The latter replaces the previous "European average" benchmark, which was based on a study from 2014. This study has not been updated since then.

#### **Comparison with EnEV reference values**

Compared to the EnEV reference values, annual savings of 524 GWh (PY: 540 GWh) are achieved. Heat energy accounts for 267 GWh of this. The average heat energy demand of the buildings is 56 kWh/m²/a and is thus 48 percent below the average weighted EnEV reference value of 108 kWh/m²/a. With regard to the electricity energy demand, annual savings of 257 GWh are achieved. The average electricity energy demand is 35 kWh/m²/a and thus 58 percent below the average weighted EnEV reference value of 85 kWh/m²/a. The resulting CO₂ savings amount to a total of 120,000 t per year.

### Comparison with average energy reference value (Germany)

In relation to the average energy efficiency value, the financed green buildings achieved annual heat energy savings of 370 GWh. The heating energy demand of the buildings amounts to  $56 \text{ kWh/m}^2/\text{a}$  and is thus 56 percent below the average value ( $127 \text{ kWh/m}^2/\text{a}$ ). A comparison with the previous year's values is not made here, as this benchmark is being used for the first time. With regard to the electricity energy demand, annual savings of 72 GWh are achieved. The average electricity energy demand is  $35 \text{ kWh/m}^2/\text{a}$  and thus 28 percent below the average reference value of  $49 \text{ kWh/m}^2/\text{a}$ . This results in absolute  $CO_2$  savings of 100,500 t per year.

#### **Investment Impact**

The total CO<sub>2</sub> emissions of the portfolio amount to 115,000 tCO<sub>2</sub>, or 63,888 tCO<sub>2</sub> proportionally for Berlin Hyp's initial financing share. In terms of calculation and depending on the benchmark selected, between 6.53 and 13.57 tCO<sub>2</sub> are saved per year with each million Euro nominal invested into one of Berlin Hyp's Green Bonds. Thus, the CO<sub>2</sub> savings per million Euros invested have slightly decreased compared to the previous year (EnEV benchmark). This is due, among other things, to the increase in some conversion factors for electricity.

Carbon Savings vs. Benchmark								
Avoided tCO <sub>2</sub> /€ mn/year	100-percent allocation to the financing of Berlin Hyp	Proportionally allocated to Berlin Hyp's initial financing share						
Comparison with current EnEV reference values	13.57 (PY: 15.17)	7.55 (PY: 7.86)						
Comparison with average energy reference value (Germany)	11.35	6.53						

An Allocation and Impact Reporting Excel template can be found on our website at: <a href="https://www.berlinhyp.de/en/investors/green-bonds">www.berlinhyp.de/en/investors/green-bonds</a>

Please see appendix for more information about the methodology.

A-Portfolio Highlights

# **D-Financing Reference**

### Berlin Hyp grants EU taxonomy loan for the first time



Berlin Hyp is providing a loan of €111 million to neuplan zwei GmbH & Co. KG to finance a development for "neuplan KI 140 München", a new office building in Munich. The loan is provided as a Berlin Hyp taxonomy loan.

This will finance the construction of a new sevenstorey office building with three basement levels. The modern, u-shaped building has approximately 17,100 square metres of usable space and is rented to the Bavarian Red Cross on a long-term basis. Construction is planned to be completed at the end of 2024.

The construction plans are unique, both in the energy efficiency of the building and in the EU taxonomy-compliant project development. The project is also aiming to obtain the DGNB "Climate Positive" award for the building operation. This particular combination qualifies the financing as a Berlin Hyp Green Loan i.e. taxonomy loan and thus also makes it suitable for a Green Bond.

The requirements of the loan include not only the achievement of the environmental goal "climate protection" but also compliance with minimum social requirements (minimum safeguards) and the DNSH (Do no significant harm) criteria at the same time. The taxonomy loan also benefits from preferential interest rates.

The new building will be located in the commercial area of the Obersendling district in Munich, which is historically characterised by a mix of industrial and residential buildings. This sustainable project development marks another step towards climate neutrality in addition to contributing to the continuous development of the neighbourhood into an urban residential district with available office space.

Customer	neuplan zwei GmbH & Co. KG
Asset class	Office/commercial building
Function Berlin Hyp	Sole Lender
Financing volume	€ 111 million
Loan period	Three years

# Berlin Hyp



# Berlin Hyp's Social Bonds

A sustainable investment

www.berlinhyp.de/en/investors/social-bonds



# A-Portfolio Highlights 2022

Requirements for maximum rent and environmental standard clearly undercut



Volume Social Finance Portfolio

**2,793** € mn

Average gross cold rent

**7.37**€/m<sup>2</sup>

Deviation to maximum eligible gross cold rent

**-33.0**%

Number of estimated beneficiaries

**243,968** 87.4 per € million invested

Number of financed eligibile housing units

99,896

35.8 per € million invested

Financed area

**6.079.346** m<sup>2</sup>

2,176.7 per € million invested

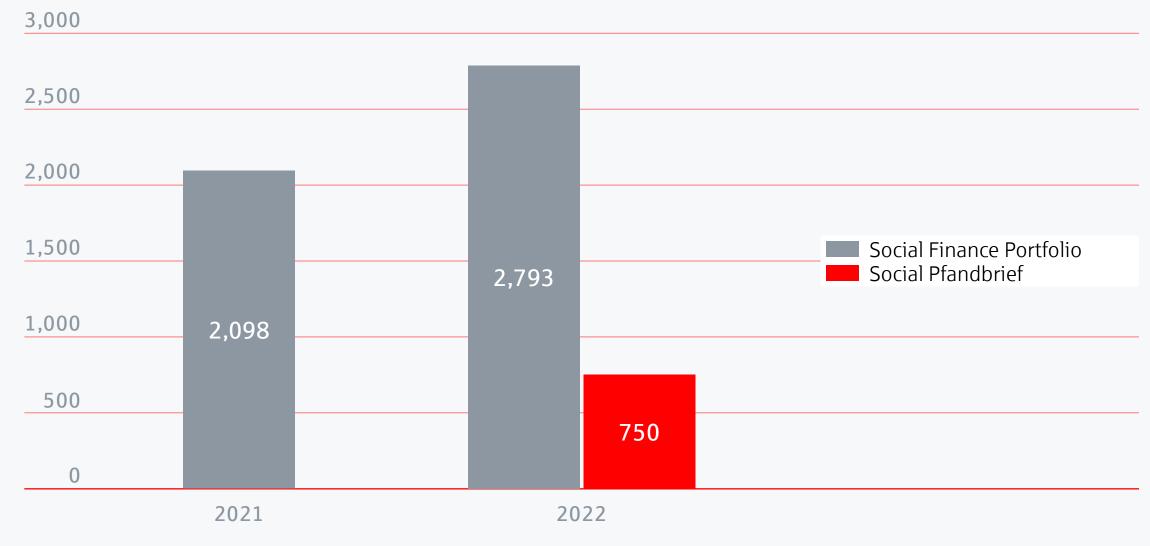
Average final energy demand

**103.3** kWh/m<sup>2</sup>/a

# **B**-Allocation Report

### Promotion of affordable housing in Germany and the Netherlands

#### **Development Social Finance Portfolio** €million **Number of Loans Total** Total by 31 December 2021 2,098 904 Valued new business for new social buildings 211 40 Difference from subsequently identified social buildings and redemptions 484 369 **Total by 31 December 2022** 2,793 1,313



An Allocation and Impact Reporting Excel template can be found on our website at: www.berlinhyp.de/en/investors/social-bonds







#### **Social Bond Framework**

The housing markets in Germany and the Netherlands have been under pressure for years. Rising rents and a scarce supply of housing disproportionately affect people with low incomes, thereby exacerbating inequality in society. Berlin Hyp would like to make a contribution to overcoming these social challenges within the scope of its possibilities by promoting the availability of affordable housing as part of its lending activities. The corresponding loans are refinanced via social bonds. With this, the Bank is expanding its existing ESG strategy.

The eligible social assets analysed in this report form Berlin Hyp's Social Finance Portfolio. They are loans for buildings with affordable housing provided by municipal housing companies, housing cooperatives or private housing companies and project developers in Germany or the Netherlands. To qualify as an affordable housing building, the property in question must pass the Housing Benefit Act Test. This is based on current social legislation and takes geographical differences into account.

With this, Berlin Hyp addresses households that are decoupled from wage development and/or whose income is above the basic social security level, but who may spend more than 30 percent of their net income on housing costs without government support.

Since, for Berlin Hyp, climate protection and social compatibility go hand in hand, eligible social assets must also meet minimum energy requirements. Only buildings that belong to the energetically best 70 percent of the national residential building stock are eligible for promotion.

With this programme, the Bank aims to contribute to SDGs 1, 10 and 11. ESG rating agency ISS-ESG has positively confirmed the impact in all three categories.



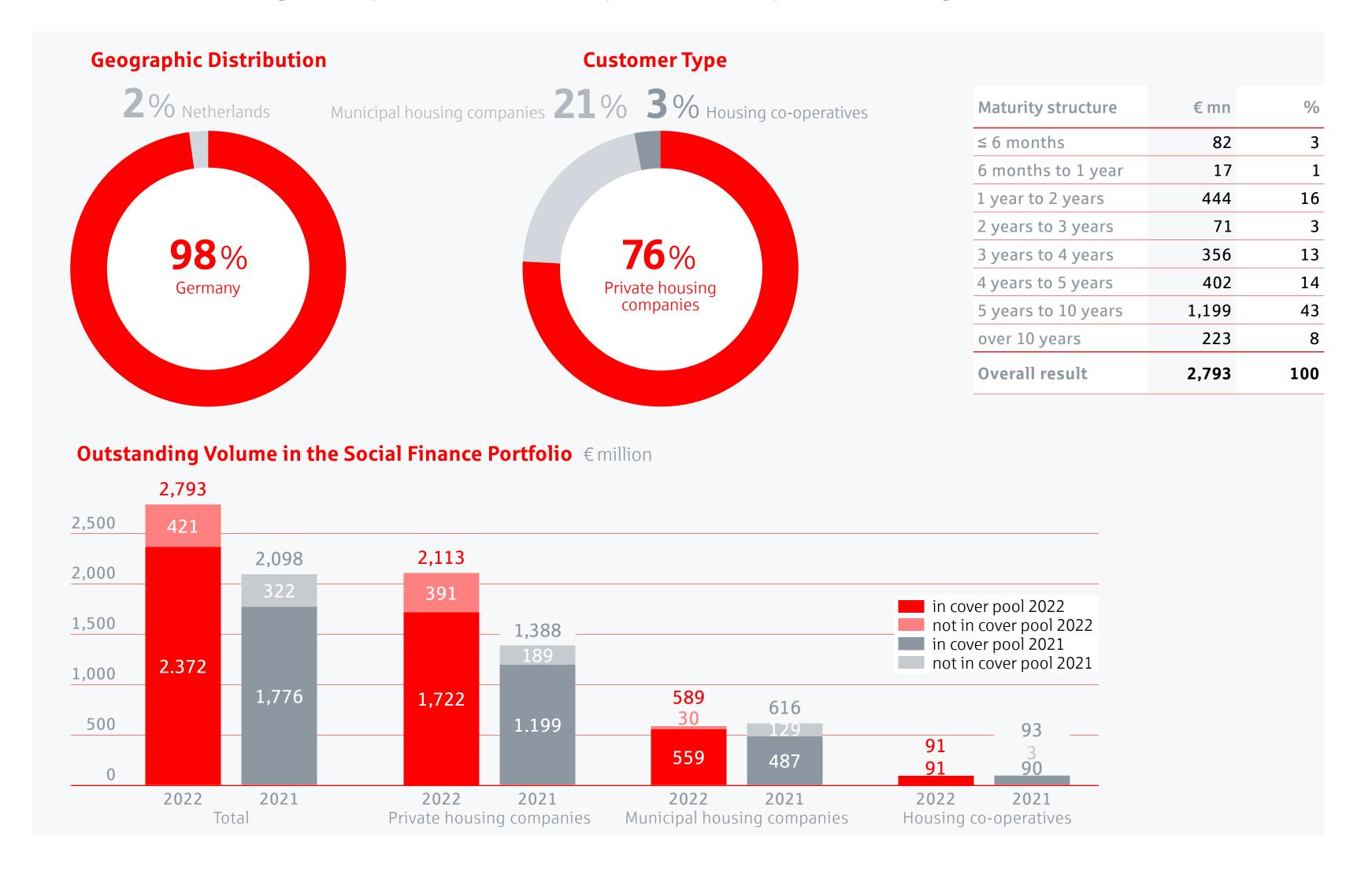
## **B**-Allocation Report

### Growth of the Social Finance Portfolio by 25 percent compared to previous year

#### **Social Finance Portfolio**

A total of 1,313 loans are in Berlin Hyp's Social Finance Portfolio. This corresponds to a total volume of €2,793 million. 85 percent of the loan volume is in the Bank's mortgage cover pool. Compared to the previous year, the volume of the Social Finance Portfolio grew by just under 25 percent. This is mainly due to an increase in eligible social assets from private housing companies, primarily caused by new business, improved energy performance and a larger number of companies publicly committed to providing affordable housing.

Private housing associations also represent the largest client group in the Social Finance Portfolio (76 percent). The volume attributable to municipal and cooperative housing associations has remained relatively stable compared to the previous year. Their share in the Social Finance Portfolio is 21 percent and three percent respectively. The focus of the portfolio is on Germany. The Netherlands accounts for two percent of the financing volume. With 43 percent, most loans in the portfolio have a remaining term of five to ten years, followed by one to two years (16 percent) and four to five years (14 percent).





## **C** – Impact Reporting

### Average difference of minus 33 percent to the maximum permissible rent

Proceeds from Berlin Hyp's social bonds are used exclusively to (re)finance loans for the acquisition, renovation or construction of buildings with affordable housing, thereby promoting its provision. In order to be considered affordable, financed flats may not exceed a maximum rent, as defined in the Social Bond Framework. This is derived from current social legislation. Based on the test criteria, the area-weighted average gross cold rent of the Social Finance Portfolio is € 7.37 per m<sup>2</sup>. This means that the refinanced properties are on average 33 percent below the permitted maximum rent. In addition, the minimum energy standard (final energy demand max. 151.1 kWh/m<sup>2</sup>/a) was also significantly undercut. Properties in the Social Finance Portfolio have an average final energy demand of 103.29 kWh/m<sup>2</sup>/a, 31.6 percent less than the minimum requirement.

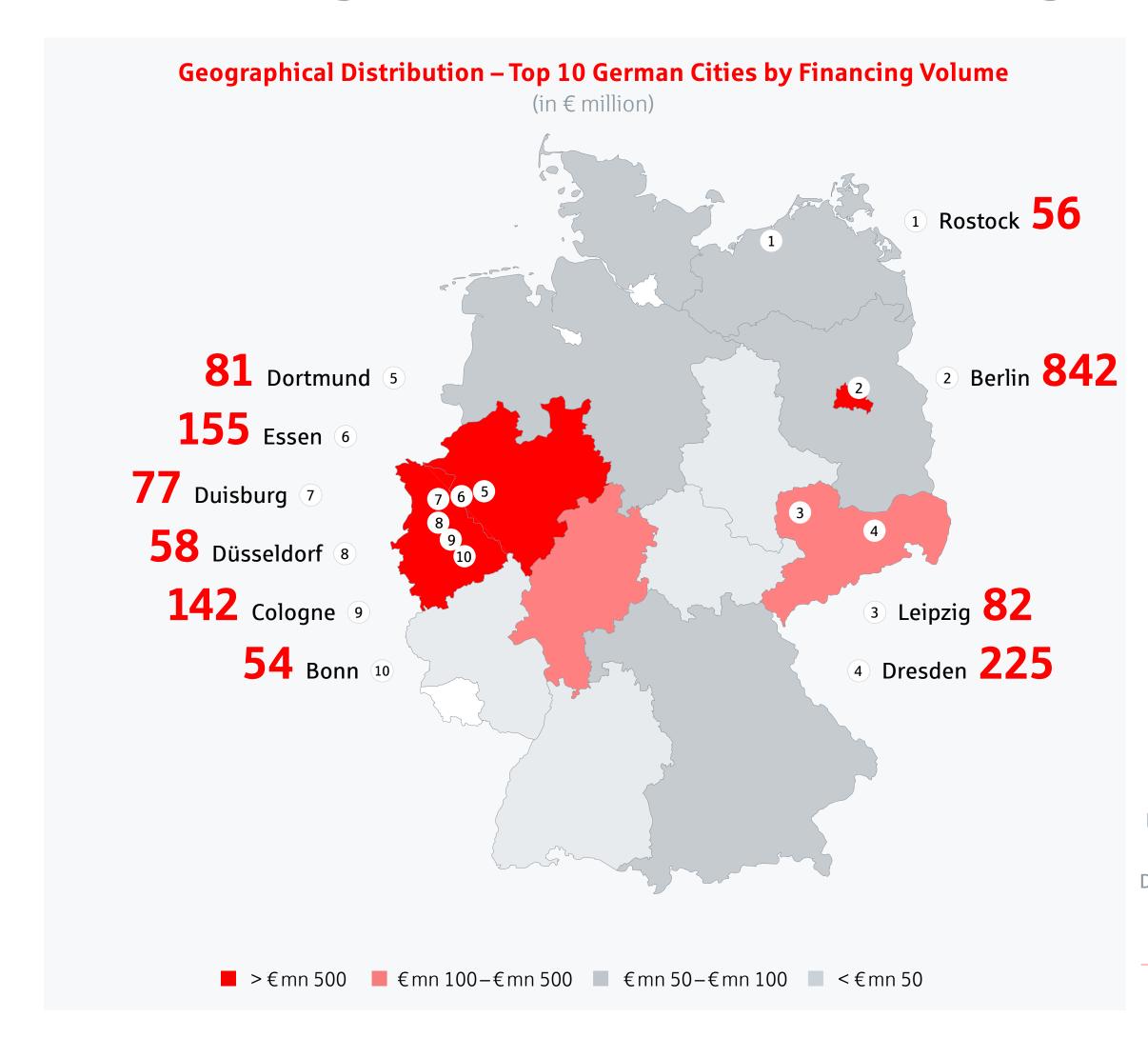
The 1,313 loans in Berlin Hyp's Social Finance Portfolio finance a total of almost 100,000 affordable flats. This corresponds to a total living space of more than six million m<sup>2</sup>. Based on the concept of appropriate living space described in the Social Bond Framework, the addressed household members could be determined. The number of persons provided with affordable housing thus amounts to about 244,000.

Affordable Housing	35.77 per € million invested	2,176.71 m <sup>2</sup> per € million invested	87.35 per € million invested	31.6% below minimum requirement resp 29.6% below the national average (146 kWh/m²/a)
	99,896	6,079,346 m <sup>2</sup>	243,968	103.29 kWh/m²/a
	Financed housing units (apartments	Total area financed	Number of estimated beneficiaries	Average fina energy demand
Social Bond Principle Category	1 NO POVERTY	Green indicators  11 SUSTAINABLE CITIES AND COMMUNITIES		



### **C** – Impact Reporting

### Financing focused on affordable housing in metropolitan regions

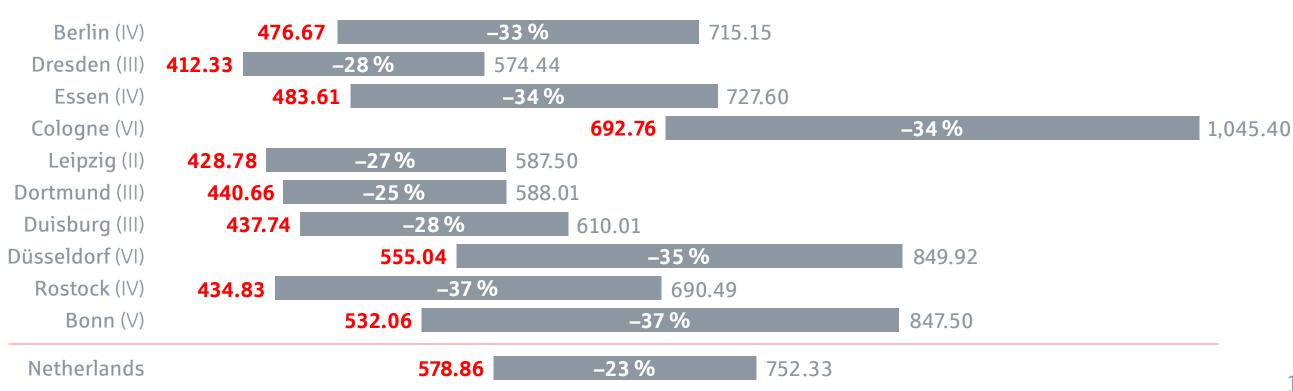


The local and regional effects of the top 10 cities in terms of financing volume of the German portfolio are concentrated in Berlin (€ 842 million), followed by the Rhine-Ruhr metropolitan region of North Rhine-Westphalia (€ 567 million) as well as Dresden (€ 225 million), Leipzig (€ 82 million) and Rostock (€ 56 million). The total volume corresponds to 65 percent of the German Social Finance Portfolio.

In the Netherlands, with almost 42 percent, a large part of the financed assets are located in Alkmaar. The average rents in the top 10 financing regions in Germany are on average 28 percent lower than the maximum rent allowed, and 23 percent lower in the Netherlands.

#### Average rent in the Social Finance Portfolio vs. average maximum rent allowed

(gross rent in Euro per flat)



D – Financing Reference



# D – Financing Reference

### Residential quarter "WuhleAnger"



#### Berlin Hyp provides Berlin Brandenburgische Wohnungsbaugenossenschaft eG with financing for an urban multi-generation property and refinances it via its Social Bond.

The site of the "WuhleAnger" residential quarter in Berlin is built up with a residential complex for urban generation living with care service administration and a children's day care centre, constructed in 2014, and comprises 5,159 m<sup>2</sup> of rental space.

House 1 comprises a five-storey residential building with 38 residential units between 51 and 62 m<sup>2</sup> plus basement.

House 2 accommodates several types of use distributed over four storeys. In addition to 20 residential units, it houses a children's day care centre, the office and administration area of the nursing service, rooms for residential groups as well as community rooms.

In addition, the buildings have a good energy performance.

Customer	Berlin Brandenburgische Wohnungsbaugenossenschaft eG
Asset class	Residential
Function Berlin Hyp	Sole Lender
Financing volume	€8 million
Loan period	Ten years

Finanzgri

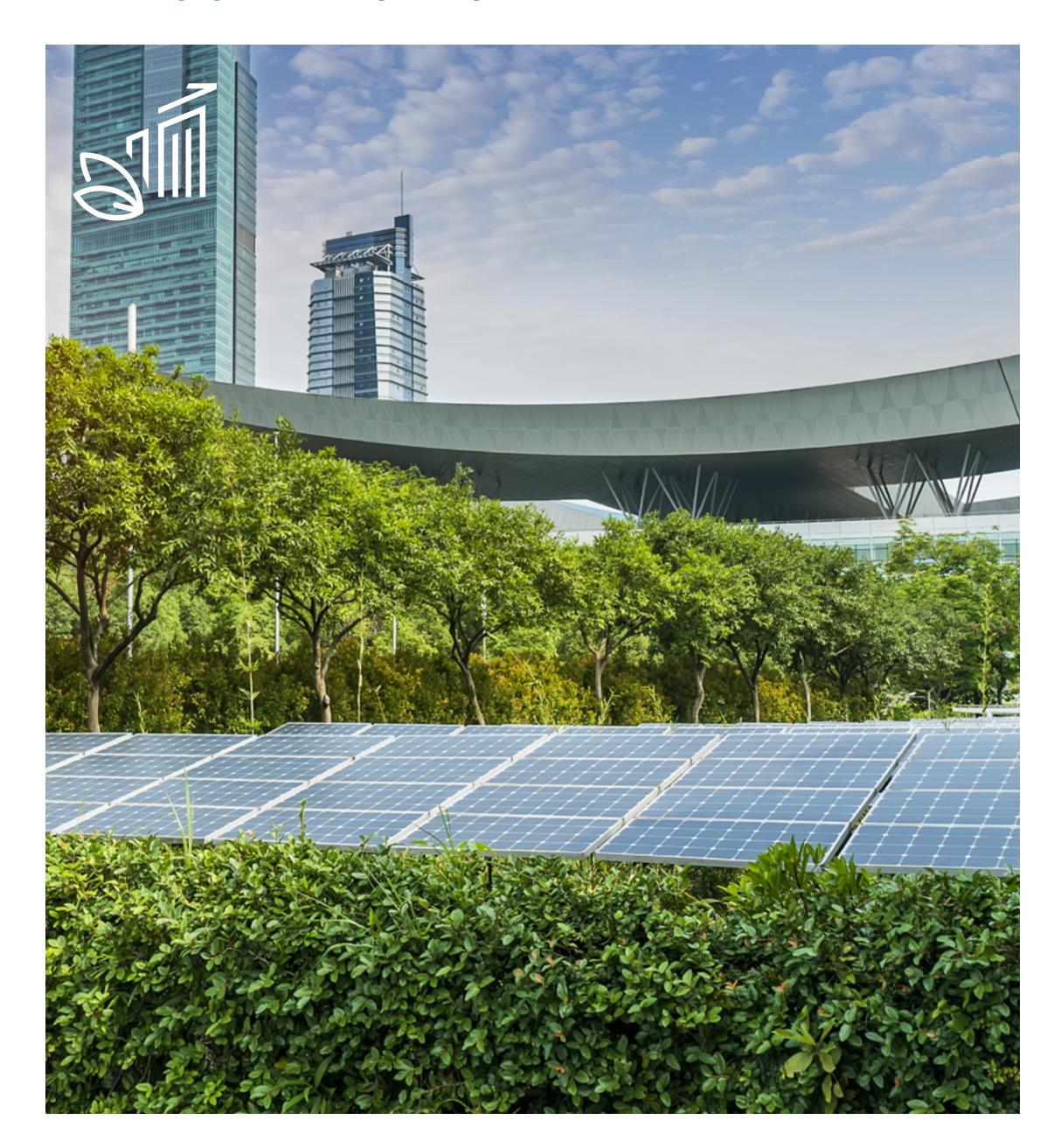
# Berlin Hyp



www.berlinhyp.de/en/investors/sustainability-linked-bonds



Berlin Hyp Sustainability-Linked Bond



# A-Portfolio Highlights 2022

Total carbon intensity reduction 9.7%

Carbon intensity

32.1 kg CO<sub>2</sub>/m<sup>2</sup>

Total carbon emissions **1,062,255,651** kg CO<sub>2</sub>/a

Total portfolio area **33,137,793** m<sup>2</sup>

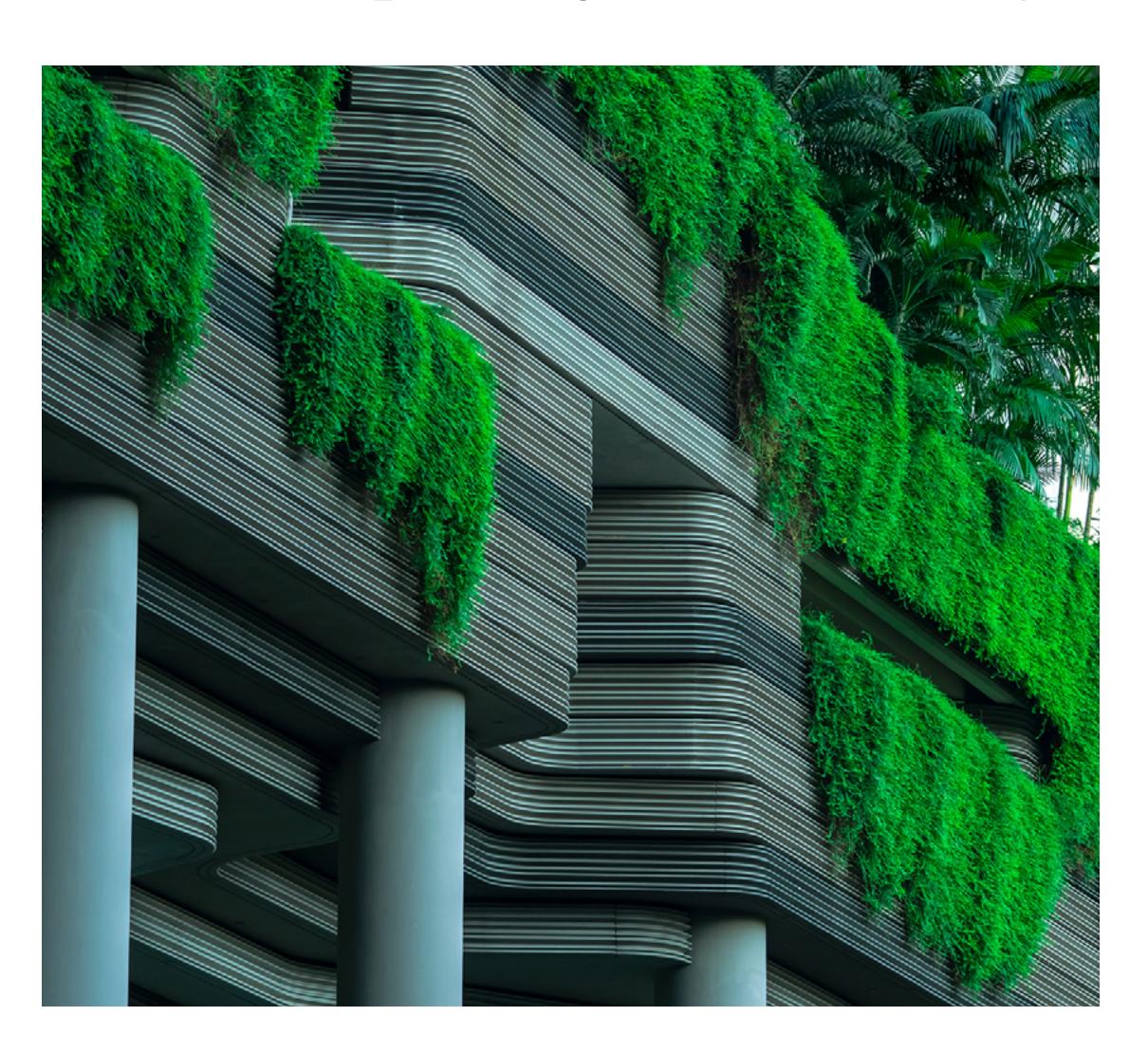
Average energy demand 132.9 kWh/m²/a

Total energy demand of portfolio 4,405,229,040 kWh /a

Transparency ratio EPC 65.4%

# **B-Strategic ESG Target**

Reduce the CO<sub>2</sub> intensity of the entire loan portfolio by 40 percent between 2020 and 2030



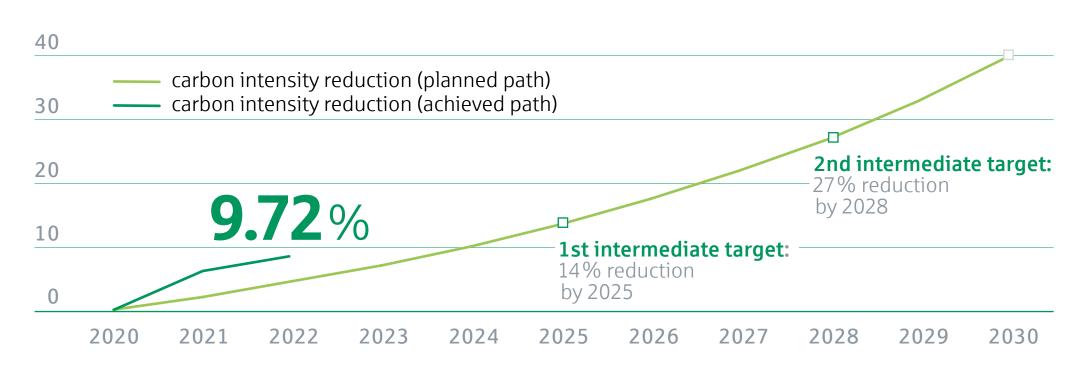
In the first year of the observation period, the CO<sub>2</sub> intensity\* of the portfolio was reduced by 7.6 percent, exceeding our expectations. This positive development was continued in the past financial year, with a reduction of 9.72 percent, compared to the base year.

The development of the KPI is influenced by two factors: on the one hand, the quality of the financed buildings, and on the other hand, the development of the conversion factors, which are used to convert the energy demands/consumptions of the buildings into CO<sub>2</sub>. The conversion factors depend on the composition of the energy mix in the individual countries.

If the share of fossil components within the energy mix decreases, the conversion factors become smaller. The district heating factors and the electricity factors have changed slightly in almost every country.

Due to the respective data availability, the energy mixes used for the reporting period are partially from 2021. Therefore, the likely deterioration against the background of Russia's war in Ukraine (e.g. through the increased use of coal for electricity generation) is not yet fully depicted in the data.

#### Carbon Intensity Reduction Trajectory in percent



<sup>\*</sup> Ratio of the aggregated  ${\rm CO_2}$  emissions of all properties financed by Berlin Hyp to the total financed area



### **C-Portfolio Overview**

### Energy values for 98.2 percent of the portfolio – in percent of the financed area

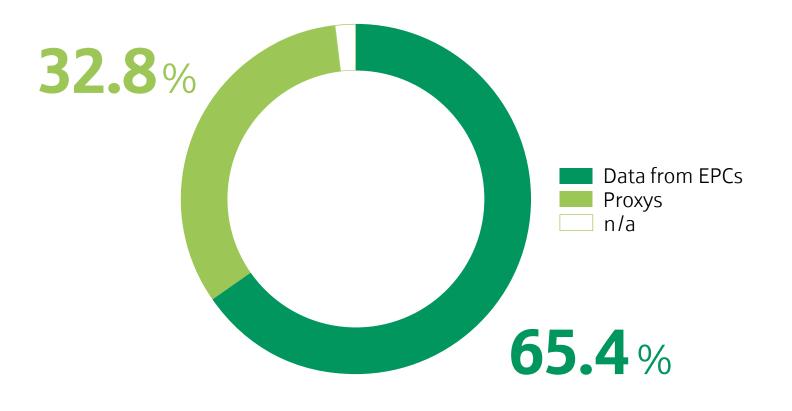


Berlin Hyp financed buildings with a total area of 33.1 million m<sup>2</sup> as at the reporting date 31 December 2022. Energy Performance Cerfitifcates were available for buildings that account for more than 65 percent of this area.

With an energy demand/consumption of 4,405 GWh/a, the emissions of the portfolio aggregate to a total of 1.062 million tCO<sub>2</sub>/a. The average energy demand/consumption of the buildings is thus 132.9 kWh/m²/a for heating energy and electricity.

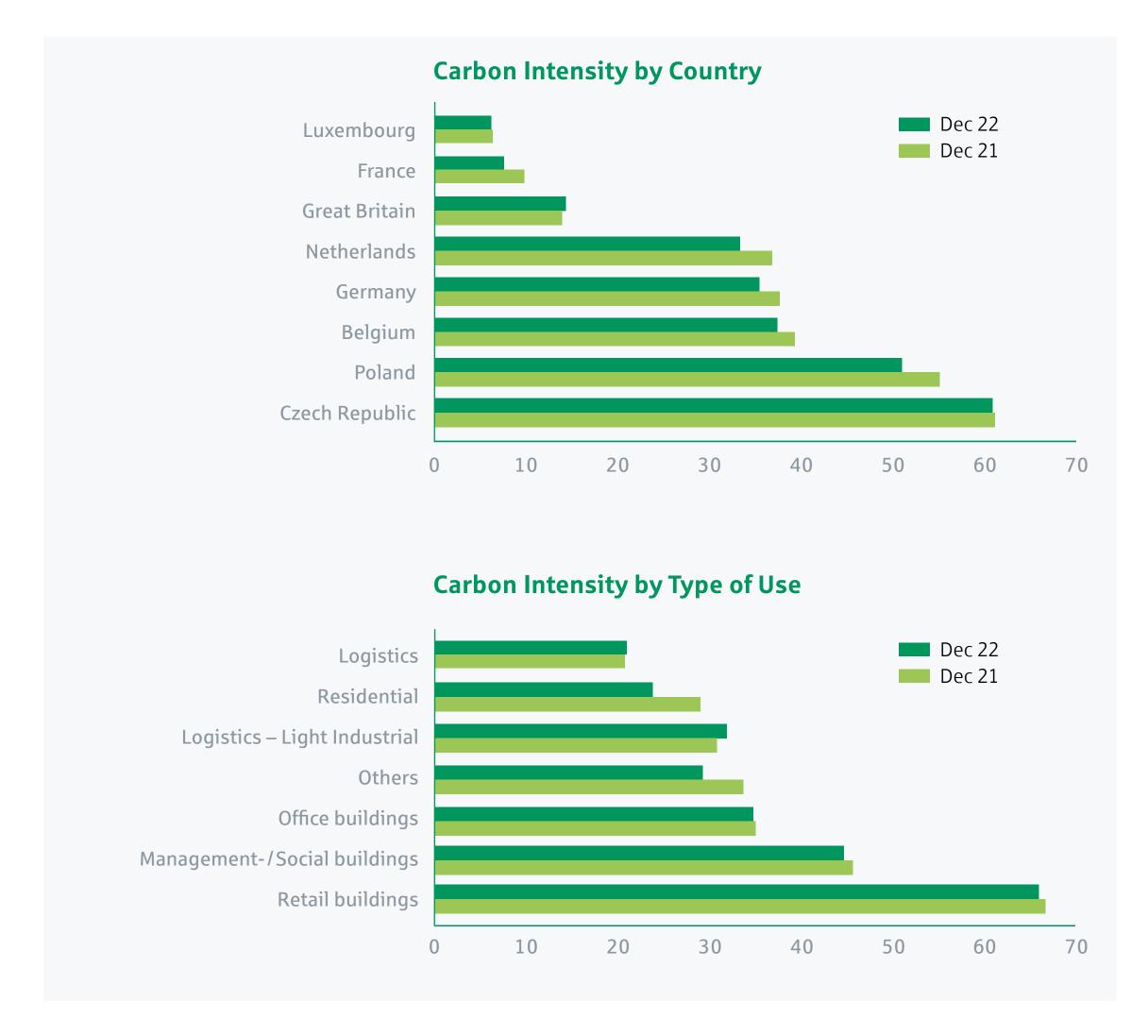
Berlin Hyp is constantly working on integrating sustainability into its business processes. In the past financial year, financing for green buildings was expanded by 21.6 percent to €8,855 million and the transparency ratio with regard to the energetic quality in the loan portfolio has increased from 44.4 to 65.4 percent.

In addition, the Bank offers labelled green loan products to actively support its customers in the transformation to more energy-efficient, sustainable buildings.



### **C-Portfolio Overview**

### Comment on adjustment factor

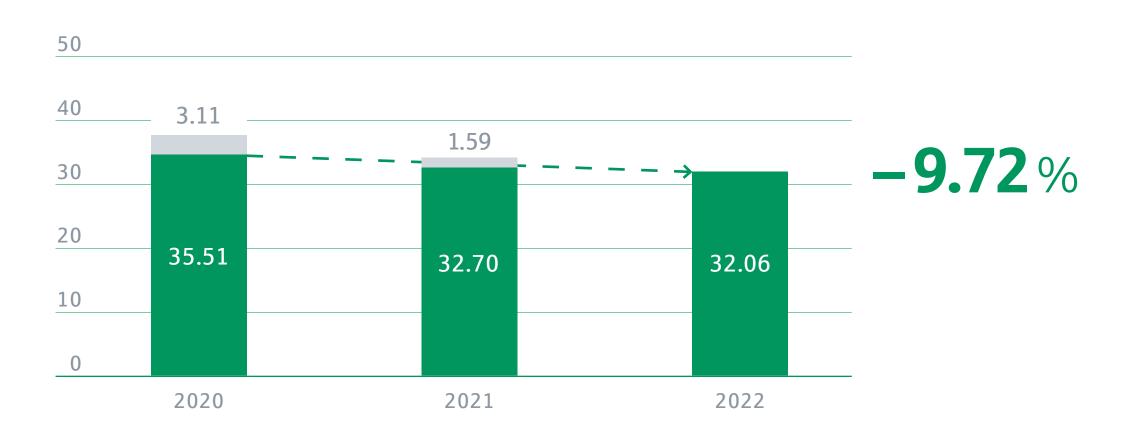


In order to calculate the total carbon emissions for the base year 2020, Berlin Hyp has used proxy values for buildings lacking precise EPC data. During the first two years from then on, numerous EPCs for newly financed buildings and for others already in the portfolio were obtained and recorded in the banks loan monitoring system. As a result, the transparency ratio in relation to the financed area increased to 65.4 percent (2021: 44.4 percent) in total.

As outlined in the Sustainability-Linked Bond Framework, changes in carbon intensity resulting from a more accurate dataset are not taken into account for measuring the development of the KPI.

In the specific case, this means that  $99,765 \, tCO_2$  resulting from the additional transparency must not be included in the KPI measurement. Accordingly, the carbon intensity of the initial year 2020 was subsequently reduced by 3.11 from  $38.62 \, to \, 35,51 \, kgCO_2/m^2/a$ .

#### **Carbon Intensity** kgCO<sub>2</sub>/m<sup>2</sup>/a



# Appendix

# Berlin Hyp





# Appendix – Social Bond Report

### Methodology Social Reporting (all calculations refer to social bond-eligible assets that are not part of the Green Building Portfolio)

#### The Housing Benefit Act Test in Practice – a Case Study

A private housing company finances a multi-family house built in 2001 in Berlin via Berlin Hyp. The object has a total living area of 1,100 m² and 16 residential units. The average apartment size is therefore 68.75 m². Based on the concept of appropriate living space, this corresponds to an average household size of three persons. The annual net rental income for the property is €123,000. Since the Housing Benefit is calculated on the basis of the gross basic rent, the net basic rent is multiplied by a factor of 1.15. This results in an annual gross basic rent of €141,450. Divided among the individual housing units, this results in a monthly gross basic rent per apartment of €736.72. Since Berlin is in rent level 4, the maximum gross basic rent for a three-person household is €778.80. The property in this case study is therefore considered affordable.

To be Social Bond eligible, the property must also meet Berlin Hyp's environmental minimum safeguard, i.e. have a final energy demand of no more than 151.1 kWh/m²/a. The object has a final energy property in this case study is therefore considered affordable.

Lastly, it is examined whether the private housing provider is pursuing a holistic socially responsible strategy. This requires a public and credible social commitment. The company under consideration makes a public commitment to promoting affordable housing and livable neighborhoods and also publishes an annual progress report on the implementation of its sustainability strategy along economic, ecological and social objectives, which are tracked using key performance indicators. The property therefore meets all the necessary eligibility criteria and is Social Bond eligible according to Berlin Hyp's Social Bond Framework.

Number of estimated beneficiaries = Sum of household members based on the concept of appropriate living space

Number of estimated benificiaries per € million invested = Social Finance Volume

Number of financed eligible housing units = Total number of housing units

Number of financed eligible housing units per € million invested = Total number of housing units

Social Finance Volume

Average gross cold rent =  $\frac{\text{Sum (m}^2 \text{ of Asset i} \times \text{monthly gross cold rent per m}^2 \text{ of Asset i)}}{\text{Summe of total living space}}$ 

#### Concept of an Appropriate Living Space

The Appropriate Living Space per number of household members is determined by the so called Indicative Area in the **Housing Benefit System** ("Richtfläche in der Wohngeldsystematik"). It determines that for a one-person household the **Appropriate Living Space is** 48 square meters, for a two-person household it is 62 square meters, and for each additional person per household it is 12 square meters.

A detailed explanation of the concept of appropriate living space and a step-by-step guide of the Berlin Hyp Housing Benefit Act Test can be found in the Appendix of Berlin Hyp's Social Bond Framework, at: www.berlinhyp.de/en/investors/social-bonds



# Appendix – Green Bond Report

### New Green Buildings (I)

Type of use	Country	Granting of loan	<b>Loan</b> (€ million)	Certificate	Type of project	Rental area (m <sup>2</sup> )	Energy demand heating (kg CO <sub>2</sub> /m <sup>2</sup> /a)	Energy demand electricity (kg CO <sub>2</sub> /m <sup>2</sup> /a)	CO <sub>2</sub> savings vs. EnEV (kg CO <sub>2</sub> /m <sup>2</sup> /a)	CO <sub>2</sub> savings vs. average Germany (kg CO <sub>2</sub> /m <sup>2</sup> /a)	<b>LTV</b> (%)
Office	Germany	18.09.2018	13.73	Energy certificate	Funding	18,993	6	71	46	25	41.2
Retail	Germany	14.04.2016	0.06	Energy certificate	Funding	2,228	37	24	31	38	58.9
Retail	Germany	06.12.2021	0.22	Energy certificate	Funding	1,052	62	34	21	29	75.5
Retail	Germany	06.12.2021	1.97	Energy certificate	Funding	6,496	7	42	32	41	57.1
Retail	Germany	06.12.2021	0.39	Energy certificate	Funding	2,626	33	40	31	45	60.6
Retail	Germany	06.12.2021	0.99	Energy certificate	Funding	2,438	14	42	37	51	64.1
Retail	Germany	14.04.2016	0.11	Energy certificate	Funding	2,191	1	54	38	52	58.9
Retail	Germany	14.04.2016	0.08	Energy certificate	Funding	2,979	21	59	17	21	58.9
Office	Germany	20.10.2022	56.11	Energy certificate	Funding	45,407	79	47	22	2	49.9
Office	Germany	15.01.2018	7.04	LEED Gold	Development	6,928	_	-	_	-	_
Office	Germany	08.12.2021	116.00	Energy certificate	Funding	41,224	52	38	47	26	39.3
Logistik	Germany	17.12.2019	3.80	DGNB Gold	Funding	23,120	56	11	3	21	70.9
Logistik	Germany	14.11.2019	1.90	DGNB Gold	Funding	20,580	38	26	1	20	54.0
Hotel	Germany	07.04.2020	0.75	LEED Gold	Funding	15,959	223	13	2	15	105.2
Office	Germany	14.07.2020	25.70	Energy certificate	Development	17,891	80	38	29	8	_
Retail	Germany	08.01.2021	0.16	Energy certificate	Funding	1,305	39	28	33	47	54.1
Office	Netherlands	19.12.2022	5.71	Energy certificate	Funding	7,315	86	24	10	8	53.2
Office	Netherlands	19.12.2022	28.16	Energy certificate	Funding	34,805	96	38	8	6	53.2
Office	Germany	15.06.2022	13.00	Energy certificate	Funding	7,170	53	2	39	18	56.8
Logistik	Germany	08.12.2022	18.00	Energy certificate	Development	45,680	36	10	8	26	_
Residential	Netherlands	29.09.2021	4.71	Energy certificate	Funding	2,295	52	_	3	35	89.6



# Appendix – Green Bond Report

### Neue Green Buildings (II)

Type of use	Country	Granting of loan	<b>Loan</b> (€ million)	Certificate	Type of project	Rental area (m²)	Energy demand heating (kg CO <sub>2</sub> /m <sup>2</sup> /a)	Energy demand electricity (kg CO <sub>2</sub> /m <sup>2</sup> /a)	CO <sub>2</sub> savings vs. EnEV (kg CO <sub>2</sub> /m <sup>2</sup> /a)	CO <sub>2</sub> savings vs. average Germany (kg CO <sub>2</sub> /m <sup>2</sup> /a)	LTV (%)
Residential	Germany	21.06.2022	0.96	Energy certificate	Development	13,425	_	-	_	-	_
Office	Germany	23.12.2021	41.78	DGNB Gold	Development	50,391	_	-	_	-	_
Retail	Germany	01.03.2022	1.84	Energy certificate	Funding	1,215	29	37	24	28	67.3
Retail	Germany	01.03.2022	2.86	Energy certificate	Funding	2,023	58	40	19	22	67.3
Retail	Germany	01.03.2022	1.41	Energy certificate	Funding	1,158	46	29	25	28	67.3
Residential	Germany	16.12.2021	7.86	Energy certificate	Funding	3,858	60	-	_	8	48.9
Residential	Germany	16.12.2021	4.50	Energy certificate	Funding	2,171	68	-	-1	7	48.9
Residential	Germany	16.12.2021	17.95	Energy certificate	Funding	9,650	62	-	_	8	48.9
Office	Germany	22.02.2022	120.00	Energy certificate	Funding	17,877	79	40	28	7	65.9
Residential	Netherlands	12.04.2022	33.48	Energy certificate	Development	7,064	34	-	10	41	_
Office	Germany	24.03.2022	19.50	LEED Gold	Funding	3,151	87	20	32	11	50.6
Office	Poland	29.04.2022	72.00	Energy certificate	Funding	39,259	34	34	46	34	59.8
Office	Netherlands	11.03.2022	78.00	BREEAM Excellent	Funding	12,722	29	22	43	41	59.5
Office	Germany	30.09.2022	22.91	Energy certificate	Development	17,131	52	19	64	43	_
Office	Poland	22.06.2022	91.22	Energy certificate	Funding	36,398	75	56	29	17	63.3
Office	Netherlands	05.08.2022	66.24	BREEAM Very Good	Funding	17,538	93	50	12	10	53.4
Hotel	Netherlands	26.07.2022	51.00	LEED Platinum	Funding	24,230	24	49	19	29	56.0
Residential	Germany	05.08.2022	24.79	Energy certificate	Funding	3,728	59	_	_	8	212.4
Office	France	08.12.2022	26.56	Energy certificate	Development	2,516	27	18	14	7	_
Office	Poland	28.09.2022	30.00	LEED Platinum	Funding	22,875	41	32	45	33	39.1

# Appendix – Impact Reporting

### Methodological principles

The methodology is based on a two-step process.

- An estimate of energy savings per building that includes the following elements:
- Determine the energy performance of each building Final energy demand for heat and electricity in kWh/m²/a
- b: Choice of the energy efficiency reference value Final energy demand for heat and electricity in kWh/m²/a
- Calculation of energy savings (a-b) Final energy demand savings for heat and electricity in kWh/m<sup>2</sup>/a

- II. An assessment of carbon intensity of avoided energy using specific carbon emissions factors through the following:
- Determination of the CO<sub>2</sub> intensity of the different energy sources for heating and differentiation of the CO<sub>2</sub> intensity of the each country-specific electricity mix and the district heating supply as well as closer differentiation of the district heating supply in Germany by region<sup>1</sup> (kg CO<sub>2</sub>/kWh final energy demand)
- e: Calculation of CO<sub>2</sub> savings intensity (c\*d) (kWh/m<sup>2</sup>/a)
- Calculation of total CO<sub>2</sub> savings (e\*rentable area of the building) (kWh/m²/a)
- **Initial market value of the property** (€ million) (initial loan amount/initial loan-to-value (LTV))
- h: Outstanding nominal value of loans in the Green Finance **Portfolio** (€ million)
- Berlin Hyp's share as a percentage of the initial market value of the asset (initial LTV) (%)
- Calculation of financed CO<sub>2</sub> savings (f\*i) (kgCO<sub>2</sub>/m<sup>2</sup>/a)

<sup>&</sup>lt;sup>1</sup> For buildings whose heating is produced by environmental energy, a CO<sub>2</sub> factor of Og/kWh is applied. For the calculation of the savings, the local district heating factor is used for the benchmark value. This applies to a total of four buildings.

# Appendix – Impact Reporting

### Energy efficiency benchmarks

#### **Benchmark 1**

#### Current energy reference values according to EnEV

With the help of the reference values in the following table, the calculated energy savings of the Green Buildings in Berlin Hyp's Green Finance Portfolio are measured against the current standards in Germany. As a result, the energy efficiency reference values for heat for the current standards lie between 30 kWh/m<sup>2</sup>/a for logistics properties and 135 kWh/m<sup>2</sup>/a for office buildings. The standards for the electricity parameters range from 35 kWh/m<sup>2</sup>/a and 105 kWh/m<sup>2</sup>/a.

The specific heat reference value for housing is taken from the dena Building Report of 2016. This value corresponds to the limit values of the EnEV 2016 for new buildings.<sup>2</sup>

As the residential framework does not take electricity demand into account, the reference value electricity for residential is not considered.

#### **Benchmark 2**

#### Average energy efficiency of existing German properties

For an in-depth understanding of different building categories within a national market, various sources need to be consulted.

Data availability for residential buildings in Germany is at a very good level. There are comprehensive studies that provide uniform information on the national building stock and present this in varying depths. For residential buildings the issuing of energy performance certificates for new buildings is obligatory and labels are issued depending on the energy performance, which enables a classification into different classes.

For non-residential buildings, the data situation is mixed, as there are many different sources that do not define or select the building stock or the categorisations in a uniform way. Therefore, assumptions and the combination of different sources are sometimes required in order to determine a comprehensible data basis. The publicly available data sources continue to develop in their qualitative preparation. Since 2002, it has also been compulsory for non-residential buildings to produce an energy performance certificate for new buildings, but even today there is still no classification and assignment of labels.

The following table shows the management summary of the benchmarks for Germany. The data basis was collected as of 2022, with the exception of the hotel category, which will be updated in January 2023.

Type of building	Spec. heating energy demand (kWh/m²/a)	Spec. electricity demand building electricity (kWh/m²/a)
Residential	60	_
Office	135	105
Trade	70	85
Hotel	105	65
Logistics	30	35
Production	110	65

Type of building	Spec. heating energy demand (kWh/m²/a)	Spec. electricity demand building electricity (kWh/m²/a)
Residential	146	_
Office	136	50
Trade	117	75
Hotel	145	85
_ogistics	82	50

<sup>&</sup>lt;sup>2</sup> Deutsche Energie Agentur (ed.): dena-Gebäudereport Statistics and Analyses on Energy Efficiency in Existing Buildings (2016)

# **Appendix – Carbon Intensity in the Real Estate Sector**

#### Overview emission factors

The emission factor for environmental energy is 0 kg CO<sub>2</sub>/kWh final energy demand and comes from the Building Energy Act.

Energy source <sup>3</sup>	kgCO <sub>2</sub> /kWh Final energy demand
Heating oil	0.306
Natural gas	0.240
Liquid gas	0.281
Wood	0.0
Biogas	0.0
Bio-oil	0.0

Electricity by country <sup>4</sup>	kgCO <sub>2</sub> /kWh Final energy demand		
Germany	0.378		
France	0.041		
Netherlands	0.370		
Poland	0.777		
Czech Republic	0.507		
Belgium	0.123		
Great Britain	0.222		
Luxembourg	0.099		

<sup>&</sup>lt;sup>3</sup> Joint Research Centre of the European Commission (Hrsg.): "CoM Default Emission Factors for the Member States of the European Union", <a href="http://data.jrc.ec.europa.eu/dataset/jrc-com-ef-comw-ef-2017">http://data.jrc.ec.europa.eu/dataset/jrc-com-ef-comw-ef-2017</a>

District heating by region in Germany <sup>5</sup>	kgCO <sub>2</sub> /kWh Final energy demand
Munich	0.066
Cologne	0.0
Duisburg	0.138
Frankfurt/Main	0.065
Düsseldorf	0.0
Böblingen	0.0
Offenbach/Main	0.121
Oberhausen	0.070
Mannheim	0.227
Bonn	0.141
Essen	0.175
Hamburg	0.064
Karlsruhe	0.081
Saarbrücken	0.0
Berlin	0.0071
Stuttgart	0.174
Leipzig	0.091
Hanau	0.178
Rostock	0.133
Mainz	0.0
Sandersdorf	0.0
Münster	0.0
Hanover	0.0755
Heidelberg	0.157
Dresden	0
Nuremberg	0
Dinslaken	0.138

Unknown heating	kgCO <sub>2</sub> Final energ		Quellen
sources	Wohnen	Gewerbe	
Germany	0.213	0.257	Eurostat energy statistics excel (2023 edition)
France	0.098	0.108	Eurostat energy statistics excel (2023 edition)
Netherlands	0.207	0.229	StatLine – Energy balance sheet; supply and consumption, sector (cbs.nl)
Poland	0.321	0.449	Statistics Poland/Topics/ Environment. Energy/Energy
Czech Republic	0.219	0.347	Eurostat energy statistics excel (2023 edition)
Belgium	0.186	0.176	StatBel 2021 – beStat Tables for each energy
Great Britain	0.206	0.202	Digest of UK Energy Statistics (DUKES): energy – GOV.UK (www.gov.uk)
Luxembourg	0.192	0.138	LUSTAT Data Explorer · Final energy consumption according to the different uses and energy forms (statec.lu)

<sup>4</sup> www.aib-net.org/sites/default/files/assets/facts/residual-mix/2021/AIB\_2021\_Residual\_Mix\_Results\_1\_1.pdf

<sup>&</sup>lt;sup>5</sup> Data from the regional energy supply companies

# **Appendix – Carbon Intensity in the Real Estate Sector**

### Emission factors for district heating outside Germany

In order to determine the CO<sub>2</sub> emissions from district heating for buildings outside Germany, the emission factor must be known or, as in this case, determined. For this purpose, the country-specific data of the heat and electricity energy production, as well as the total CO<sub>2</sub> emissions from the year 20207 of the International Energy Agency are used. Given that carbon emissions are calculated as the total of emissions out of electricity and heating, the values only attributable to heating energy must first of all be determined for each country as follows:

$$CO_2$$
 – intensity (heat) = percentage of heat emissions ×  $CO_2$  – emissions tot

The percentage share of heating energy emissions compared to total emissions equates to the percentage share of heating energy generated compared to overall energy generated with regard to energy production efficiency. This is calculated on the basis of existing energy data.

Using these heating energy emissions values, the emission factor can now be calculated in relation to the heating energy generated by the respective country:

$$CO_2$$
 – factor (heat) = 
$$\frac{CO_2$$
 – intensity (heat) heat output

This results in the emission factors for district heating outside Germany used in the report, which are essential for impact reporting.

Country	Heat energy produced 7 (TWh)	<b>Electricity produced</b> <sup>7</sup> (TWh)	Emsissions total 8 (MtCO <sub>2</sub> )
France	41.67	411.39	33.3
Netherlands	22.23	109.16	42.4
Poland	65.28	137.23	126.0
Czech Republic	23.05	56.94	42.5
Belgium	5.56	79.16	15.7
Great Britain	14.72	280.56	65.4
Luxembourg	1.39	6.12	0.2

District heating by country	kgCO <sub>2</sub> /kWh Final energy demand
France	0.030
Netherlands	0.140
Poland	0.301
Czech Republic	0.251
Belgium	0.075
Great Britain	0.089
Luxembourg	0.012

<sup>&</sup>lt;sup>6</sup> No more recent data available

<sup>&</sup>lt;sup>7</sup> www.iea.org/data-and-statistics/data-product/world-energy-balances-highlights

<sup>8</sup> www.iea.org/data-and-statistics/data-product/greenhouse-gas-emissions-from-energy-highlights

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