



Annual Reporting 2017/18
Green Bonds

Editorial



Dear Sir or Madam,

Today we are publishing our third annual report for our Green Bonds and, given the development of the Green Bond market in general and Berlin Hyp's green finance business in particular between 1 March 2017 and 28 February 2018, we do so with great pride.

The green covered bonds segment has gained significant momentum over the past twelve months, three years after we became the first bank to issue a Green Pfandbrief. In November 2017, Deutsche Hypothekbank from Hanover became the second bank in Germany to issue a Green Pfandbrief. The

two banks were in close dialogue in the run-up to the Pfandbrief issue. Deutsche Hypo's eligibility criteria were so similar to ours, and its framework so robust, that we gladly concluded a licensing agreement for the use of the "Green Pfandbrief" trademark. January 2018 saw the first green covered bond from Norway issued by *Sparebanken 1 Boligkreditt*. At the same time, EeMAP¹, the Energy efficient Mortgages Action Plan of the European Covered Bond Council (ECBC), has also gained significant momentum. The pilot phase of this pioneering project, which is backed by the European Commission, begins this June. Berlin Hyp has supported EeMAP since the initiative was launched in 2016 and will continue to do so moving forward. A successful pilot phase should give the green light for a whole host of new green covered bonds from many different covered bond jurisdictions. We intend to act as a consultant in this area and also exert our influence to ensure that the quality of the requirements for eligible green real estate assets is as high as possible. At the same time, we believe that this provides an opportunity to further pursue our goals on the green bond market: defining best practices and acting as a driving force.

In terms of our operative business, we have also looked into expanding the green covered bond segment – which has so far been relatively small – and issued our second Green Pfandbrief in benchmark format in June 2017. In addition, we have also been active in the area of senior unsecured bonds and issued our second Green Senior bond in October last year – a bond that broke records in a number of ways. It marked the first time that a Berlin Hyp bond attracted more international investors than domestic ones. This is all the more noteworthy considering that the 10-year bond with a re-offer spread of midswaps + 40 basis points is the most expensive senior non-preferred bond ever issued by a commercial bank in this maturity. By issuing its fourth Green Bond in benchmark format and generating an aggregated issuance volume of € 2 billion, Berlin Hyp also became the largest European Green Bond issuer in the commercial banking sector – a position we cemented after the end of the reporting period in April 2018 by issuing our third Green Senior Unsecured bond and fifth green bond in total.

We are also proud of the fact that we were able to conclude the further development of our eligibility criteria for green buildings at the start of the year. After a nine-month project together with renowned energy consulting firm Drees & Sommer, we have integrated the revised, even-stricter requirements into our internal processes and into the Green Bond Framework. The amended Green Bond Framework has been published on our green bond



¹ EeMAP is an initiative set up by the European Mortgage Federation (EMF) and the European Covered Bond Council (ECBC), as well as other parties. The initiative has received financial backing from the European Union's Horizon 2020 programme. Its goal is to create an "energy efficient mortgage" that is aimed at incentivising property owners to renovate their properties from an energy-efficiency perspective or acquire energy-efficient properties. For more information visit workspaceforadminwebsite.energyefficientmortgages.eu/

website at www.green-pfandbrief.com. We also want to use this year's report as a chance to explain the new criteria, which are based on the separate analysis of energy demand for heating and for electricity. Apart from this aspect, the report is structured in the customary manner in sections B to D:

A – Green Bond Framework page 4

B – Portfolio Report page 6

C – New Business Report page 8

D – Impact Report page 10

With three years' experience on the Green Bond market, we are still on a steep learning curve. We are aware of this and are also prepared to develop consistently and sustainably moving forward. The importance of green finance business and refinancing for Berlin Hyp is clear to see by the number of measures and developments that have been implemented and taken place over the recent past. These include a large number of other elements besides our actual business activities and the aforementioned development of our Green Bond Framework. These include:

- Marketing measures (such as the sponsorship of *Sustainabonds*, a new green bond news portal, which was launched in 2017; hosting of the inaugural *Sustainabonds Green Bond round table* in December 2017; sponsorship of our partner Climate Bonds Initiative's annual conference in March 2018)
- Scientific analysis of green finance issues (sponsorship of the Post Issuance Reporting in the Green Bond Market study published by the Climate Bonds Initiative in June 2017; participation in UNEP's Green Tagging: Mobilising Bank Finance for Energy Efficiency in Real Estate study published in December 2017)
- Development of the Green Bond market (e.g. member of the Green Bond Principles since April 2015; EeMAP stakeholder since September 2016; member of the *European Green Securities Steering Committee* since September 2017)
- Anchoring of green finance in Berlin Hyp's corporate strategy (strategic goal: 20% of the loan portfolio to be green by 2020; incentivisation of loans for green buildings with 10 basis points since March 2016; analysis of the rating distribution in the Green Finance Portfolio compared to the loan portfolio as a whole carried out for the first time in April 2017).

We want to continue to develop moving forward, not least in order to offer our Green Bond investors sustainable and convincing products that are based on the latest market findings. Your feedback is particularly important to enable us to achieve this. So please don't hesitate to get in touch with us. I hope you enjoy reading our third green bond annual report.

Yours sincerely,



Gero Bergmann

A – Green Bond Framework

Berlin Hyp published a revised version of its Green Bond Framework in April 2018. The Green Bond Program that was first published in August 2016 and governs the structure of both Green Pfandbriefe and Green Senior Unsecured bonds stipulates that Berlin Hyp can make adjustments to the framework at any time, provided said adjustments result in the eligibility criteria becoming stricter.

In this context the bank made its first update in April 2017 and raised the minimum levels of accepted sustainability certificates – from silver to gold in the case of LEED, and from good to very good in the case of BREEAM, for example. Now the bank is tightening up the eligibility criteria with regard to maximum accepted energy demands in a second update. The basis for this revision was a joint project with the energy consulting firm *Drees & Sommer*², in which the firm subjected Berlin Hyp's Green Finance Portfolio to a benchmarking test. The test confirmed the outstanding energy quality of the Green Finance Portfolio. Subsequently, Berlin Hyp and Drees & Sommer developed measures serving to safeguard the quality of the portfolio in the medium to long term. These measures include reducing the permitted maximum thresholds but also taking into consideration energy demand for electricity, as the latter is becoming increasingly important as building envelopes improve. The new eligibility criteria apply to all new loans for green buildings by Berlin Hyp and do not affect the assets already in the Green Finance Portfolio. The revised framework as of April 2018 can be downloaded at www.green-pfandbrief.com. The framework defines green buildings as energy-efficient properties with an energy demand or consumption that does not exceed the following values:

Property type		Framework old	Framework new		Total kWh/(m ² *a)
		Energy demand heating kWh/(m ² *a)	Energy demand heating kWh/(m ² *a)	Energy demand electricity kWh/(m ² *a)	
Residential	New residential properties	50	60	–	60
	Old residential properties	75			
Office	without air conditioning	110	100	80	180
	with air conditioning	135			
Retail	Retail buildings (shopping malls, department stores)	70	60	75	135
	Other retail buildings	95			
Hotels		95	95	60	155
Logistics buildings		30	30	35	65
Production buildings		110	Not relevant		



² www.dreso.com/de/unternehmen/inside-drees-sommer/

Additional/alternative eligibility criteria include the following sustainability certificates³:

LEED	Gold status or higher
BREEAM	Very good status or higher
DGNB	Gold status or higher (for certificates up to 30 June 2015: silver status or higher)
HQE	High level status or higher

The reference values above (derived from the German energy savings regulation (Energy Savings regulation, EnEV⁴)) form the basis of our criteria and are also part of the annual re-verification process by oekom research. The criteria refer to the final energy demand. Anyhow, the primary energy demand can also be used in certain cases where modern technology has been installed in/at the building (such as a block power station, heat recovery plant, etc.) to achieve a significant reduction in primary energy demand.

The eligibility criteria are generally to be fulfilled on an additive basis, which means that the main decision criterion is the sum of the energy demand for heating and electricity (shown in the above table in the “Total” column). In order to prevent buildings with energetically poor building envelopes or buildings with disproportionately high electricity demand being included in the Green Finance Portfolio, the maximum values in each energy demand category may not be exceeded by more than 20%.

In terms of the heating components for the two prevalent building categories, office and retail, which together make up 96% of the Berlin Hyp Green Finance Portfolio, the new energy-efficiency criteria are 35% and 14% lower respectively than before. The maximum threshold for residential buildings has been lowered by 20% with regard to existing buildings. Under the EnEV, the heating energy demand of newbuilds in Germany is not permitted to exceed 50 kWh/(m²*a). In the case of residential buildings, the differences attributable to the personal characteristics of users means that no maximum threshold for electricity demand has been defined.

oekom research AG positively assessed the sustainability of the green bond programme underpinning the issues as part of its second party opinion dated 22 August 2016. This verdict was confirmed in consideration of the adjustments to the framework as part of the annual re-verification process in April 2018.⁵

3 LEED, BREEAM, DGNB and HQE issue sustainability certificates for buildings. Buildings financed by Berlin Hyp following the issue of the green Pfandbrief on 27 April 2015 must achieve a score of at least 50% in the energy efficiency category of the green building certificate, provided the building does not already qualify through its energy requirements and consumption.

4 www.bundesanzeiger.de/ebanzwww/wexsservlet?page.navid=to_bookmark_official&bookmark_id=aw0a1BTBco6yYzcam0E; based on the analysis by the external energy consulting firm, Berlin Hyp decided in 2018 to make its eligibility criteria even stricter. This is in line with the bank's long-term strategy concerning the quality of eligible assets.

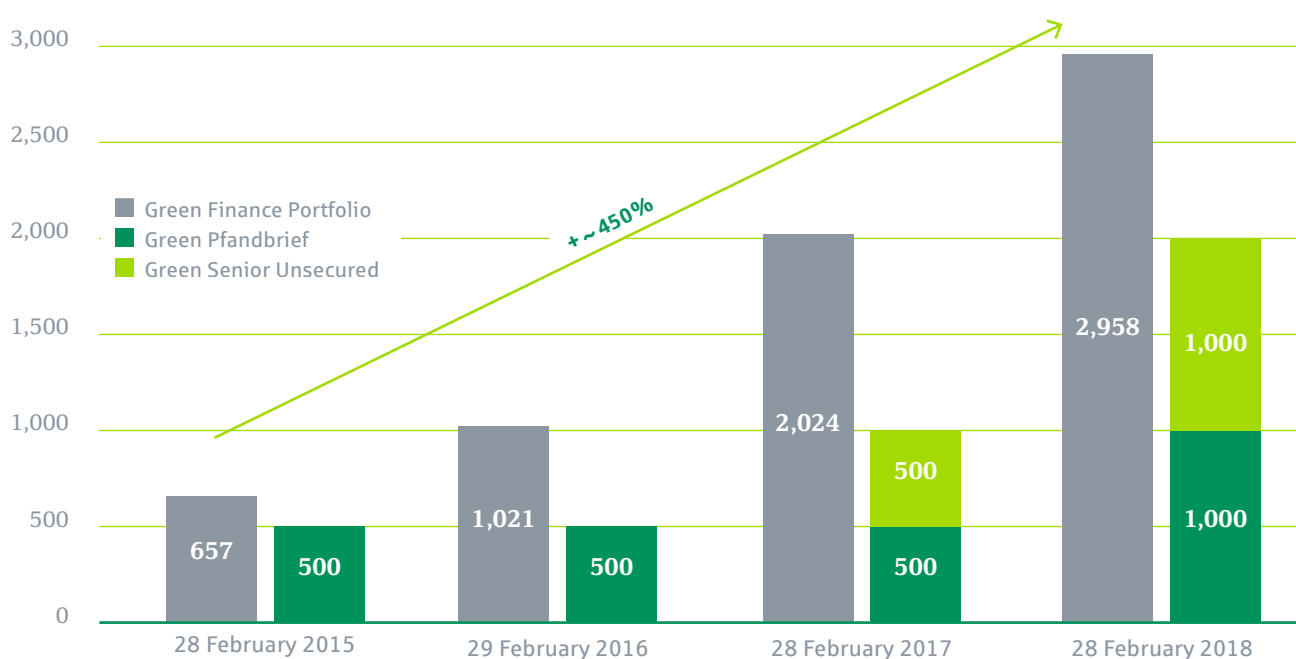
5 The re-verification can be downloaded at www.green-pfandbrief.com.

B – Portfolio Report – Development of the Green Finance Portfolio

In the reporting period from 1 March 2017 to 28 February 2018, portfolio growth of € 934 million has been achieved through a € 561 million increase in new green business and € 373 million in existing loans identified as green financing. This means that over 14% of the Berlin Hyp loan portfolio can be attributed to the Green Finance Portfolio. The successful trend observed in the previous year has been maintained through the rising awareness of the issue of green finance on the real estate and capital market as well as the optimisation of internal processes and the underlying IT systems of the bank. As at 28 February 2018, the Green Funding Portfolio encompassed the financing of 70 properties. At € 2,002 million, around two-thirds of the portfolio is part of Berlin Hyp's mortgage cover pool. The development is shown in the following table and chart.

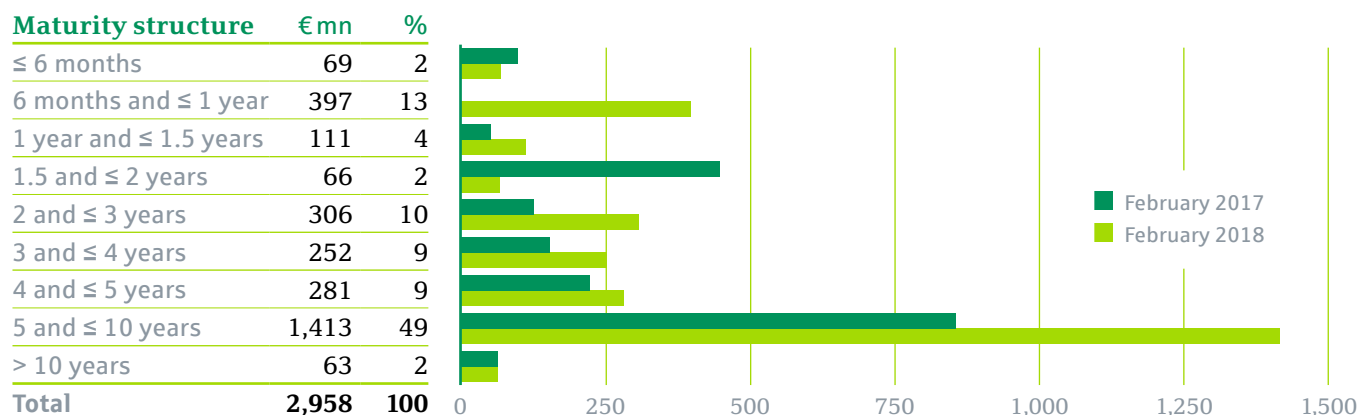
Nominal value € mn

	Total	Number of loans
Total by 28 February 2017	2,024	42
Subsequently identified already existing loans for green buildings	373	12
New loans for green buildings granted after 28 February 2017	561	16
Total by 28 February 2018	2,958	70

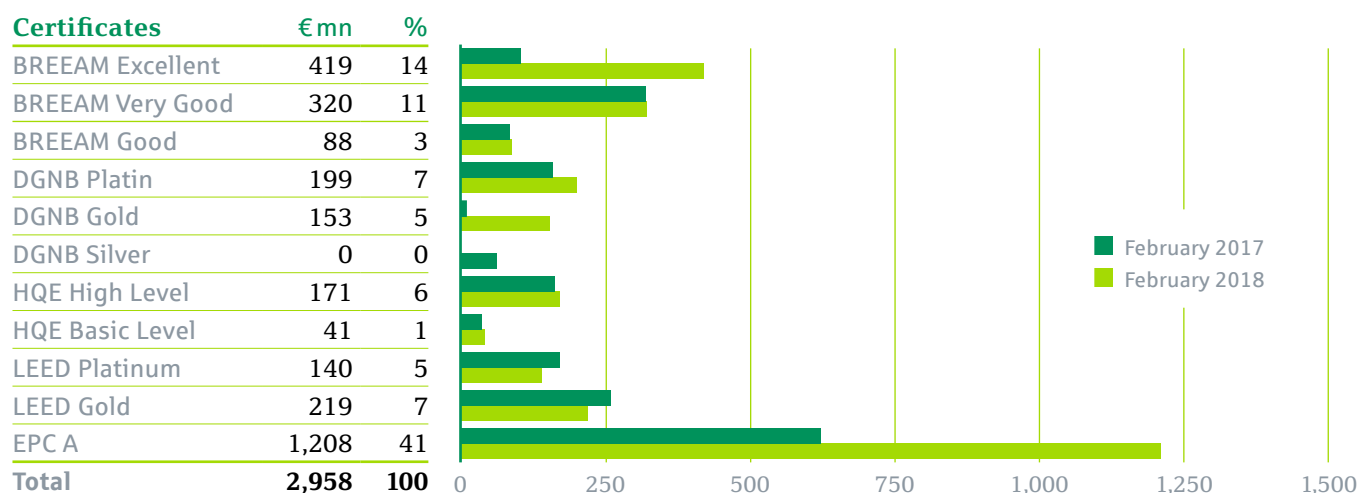


In sections B.1 to B.4, the green building financing included in Berlin Hyp's Green Finance Portfolio is classified according to a variety of parameters. All figures relate to the closing date as at 28 February 2018.

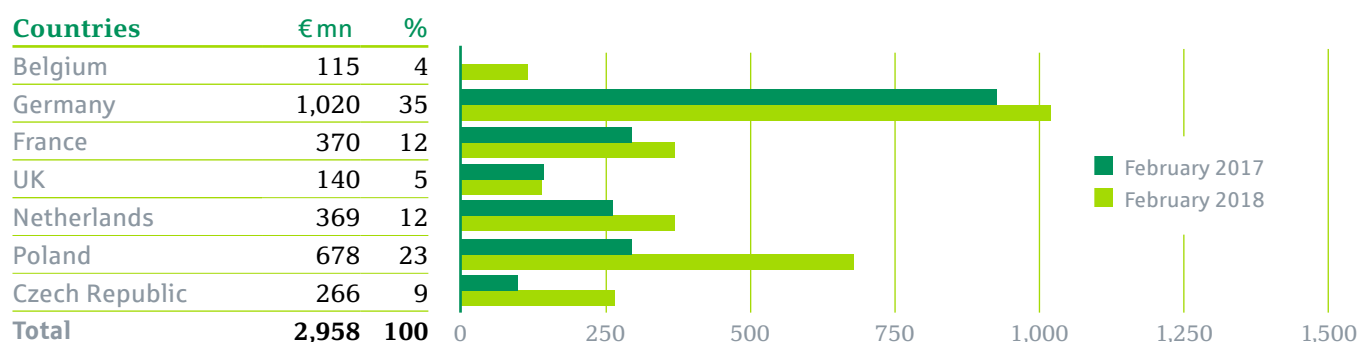
B.1 Loans for green buildings according to their term to maturity



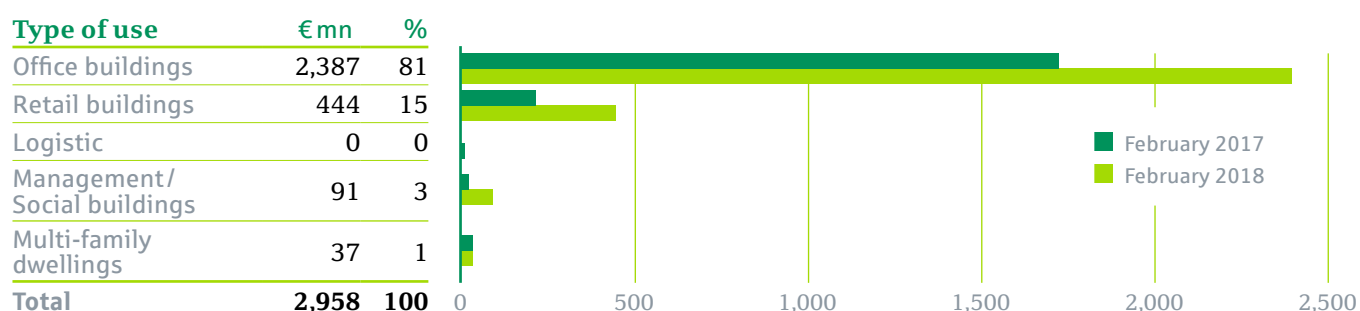
B.2 Loans for green buildings according to certification levels



B.3 Loans for green buildings according to countries

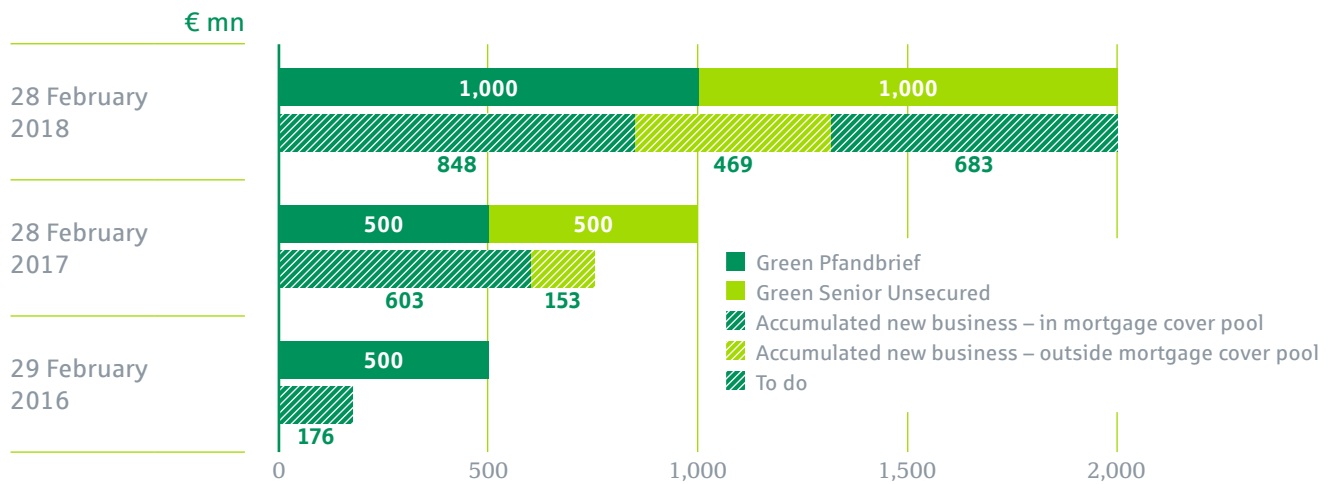


B.4 Loans for green buildings according to type of use



C – New Business Report

Berlin Hyp's Green Bond Program stipulates that both Green Pfandbriefe and Green Senior Unsecured bonds serve to refinance loans for green buildings already included on the balance sheet, and in the case of Green Pfandbriefe these must also be part of the bank's mortgage cover pool. At the same time, the bank is committed to making every effort to invest an amount equivalent to the proceeds from the issued Green Bonds in new green assets during the term of the bond (and to include this amount in the mortgage cover pool in the case of Green Pfandbriefe). The following chart shows that € 1,317 million have been already invested by 28 February 2018 in order to fulfill our commitment for the first four Green Bonds. The remaining amount of € 683 million is split up to € 152 million for the second Green Pfandbrief and € 531 million for the pair of Green Senior Unsecured bonds.



Since the last report on 28 February 2017, a total of 16 new loans with a nominal value of € 561 million have been added to the Green Finance Portfolio. The new green loans from the latest reporting period are presented below in anonymised form.



New Business from 1 March 2017 til 28 February 2018

Type of use	Country	Granting of loan	Loan (€ mn)	Certificate	Type of project	Rentable area (m ²)	Energy demand heating (kWh/m ² *a)
Hotel	Netherlands	06.07.17	30.00	EPC	Financing	15,824	58
Office	Czech Republic	04.12.17	69.50	BREEAM Very Good	Financing	25,046	74
Office	Germany	20.12.17	29.56	LEED Platinum	Planned refurbishment and subsequent financing	48,020	97
Office	Poland	21.04.17	1.06	BREEAM Very Good	Development and subsequent financing	10,988	77
Office	Poland	21.04.17	0.34	BREEAM Very Good	Development and subsequent financing	10,125	71
Office	Germany	08.09.17	0.25	DGNB Gold	Financing	14,155	53
Office	Netherlands	01.09.17	48.00	BREEAM Excellent	Development and subsequent financing	25,649	62
Office	Czech Republic	13.01.17	50.00	BREEAM Excellent	Financing	34,069	62
Office	Germany	ongoing	27.00	DGNB Gold	Development	68,041	Development
Office	Germany	28.04.17	11.96	LEED Platinum	Financing	65,466	97
Office	Poland	24.05.17	44.75	BREEAM Very Good	Financing	45,276	66
Office	Poland	11.08.17	101.52	BREEAM Excellent	Financing	71,441	55
Office	Czech Republic	10.11.17	23.20	EPC	Financing	14,708	37
Retail	Poland	27.09.17	66.00	EPC	Financing	46,664	21
Retail	Czech Republic	15.09.17	40.69	EPC	Financing	12,422	51
Office	Netherlands	30.01.18	17.49	EPC	Refurbishment and subsequent financing	29,065	109
Total			561.20				

D – Impact Report: Results and methodology

On the following pages you will find the results and methodology of our assessment of avoided carbon emissions owing to Berlin Hyp's Green Bonds. The calculations concern all green building financings added to the Green Finance Portfolio following the issuance of the first Green Pfandbrief (currently 59). Berlin Hyp was assisted in the calculations by Crédit Agricole's Sustainable Banking Team. The calculations were passed on to oekom research on a line-by-line basis, who reviewed the plausibility of the results in their re-verification on 27 April 2018⁶. Due to data confidentiality this report only contains aggregate numbers. All calculations are based on loan data as of 28 February 2018 and on the most current available energy performance certificate (EPC) and/or sustainability certification for each property. In four cases the energy efficiency of the properties had to be estimated as only a sustainability certification was available.

D.1 Estimated avoided carbon emissions

Several assumptions significantly influence the estimation of avoided carbon emissions.


First, the quantification of avoided carbon emissions of a specific asset depends on the choice of a "baseline", i. e., the carbon emissions of a reference asset against which the carbon emissions of this specific asset are compared. This choice is highly sensitive since avoided carbon emissions decrease as the energy efficiency of the chosen baseline increases. This is particularly true in the real estate sector where buildings' energy performance varies a lot depending on asset type and construction year.

Second, another important decision is the way carbon emissions are allocated to one given asset. Practically, one can allocate the avoided carbon emissions of a given asset integrally to the debt holder or proportionally in the amount of the financing share.

In order to provide a maximum of transparency to investors, this carbon reporting includes four different estimates of avoided carbon emissions corresponding to two baselines:

- An estimate of the average energy performance of existing European buildings provides the first baseline. It means that any building in the Green Finance Portfolio is compared to the average energy performance of existing European buildings. This baseline provides a rough estimate of the positive carbon impact of Berlin Hyp's Green Bonds assets.
- Current energy reference values for different real estate asset classes according to the German Energy Savings regulation (Energieeinsparverordnung, EnEV) serve as a second baseline. This baseline gives a more conservative assumption of avoided carbon emissions.

In addition, the following two assumptions are applied to the avoided carbon emissions:

- 100% of the carbon impact of each asset is allocated to the Berlin Hyp financing.
- Carbon impact allocated proportionally to Berlin Hyp's initial share in financing. 

Results are provided in the table below.

In avoided tCO ₂ /€ mn/year	100% allocated to Berlin Hyp financing	Proportionally allocated to Berlin Hyp initial financing share
against European average	36.3 (PY 28.7)	21.1 (PY 13.7)
against current EnEV reference values	15.7 (PY 9.6)	8.7 (PY 4.5)

At portfolio level, avoided carbon emissions as a result of green building financings have significantly increased since last year, whatever the baselines and calculation assumptions used for carbon impact assessment. The figures show the constant improvement of energy efficiency of green buildings included in Berlin Hyp's Green Finance Portfolio. Nevertheless, the significant variance between the above values demonstrates the importance of baselines and calculation assumptions in avoided carbon emissions reporting. In terms of energy demand, the green buildings in Berlin Hyp's Green Finance Portfolio represent 87.4 GWh annual energy demand savings.⁷ The average energy demand for heating/cooling of the buildings is 54 kWh/m²*a. This is 41% below the weighted average EnEV reference values.

D.2 Principles of methodology

The methodology is based on a two-phase process:

- I. An estimation of the energy savings per building, which includes:
 - a: Assessment of each building's energy efficiency (kWh final/m²*year)
 - b: Choice of the energy efficiency baseline (kWh final/m²*year)
 - c: Calculation of savings in energy efficiency (a–b) (kWh final/m²*year)

- II. An assessment of the carbon intensity of the energy saved based on the country context containing
 - d: Determination of the carbon intensity of commercial buildings in each country given its energy mix (kg CO₂/kWh final)⁸
 - e: Calculation of carbon intensity savings (c*d) (kg CO₂/m²*year)
 - f: Estimation of total carbon savings (e*rentable surface of the building) (kg CO₂/year)
 - g: Initial Market Value of building (€ mn) (Initial Loan / Initial Loan to Value (LTV))
 - h: Outstanding nominal amount in the Green Finance Portfolio (€ mn)
 - i: Berlin Hyp share expressed as a percentage of the initial market value of asset (Initial LTV) (%)
 - j: Estimation of financed carbon savings (f*i) (kg CO₂/year)

⁷ $\sum [\text{m}^2 \text{ Building} * (\text{baseline} - \text{kWh per m}^2)]$

⁸ See also Section D.4 and Appendix.

D.3 Energy Efficiency Baselines

Two sets of comparable values were selected as energy efficiency baselines in order to provide different annual estimates of energy savings.

Baseline 1:

Average energy efficiency of existing European buildings

Energy needs for heating, cooling and domestic hot water for buildings representative of existing building stock have been modelled in the European project ENTRANZE⁹. Single houses, multi-family dwellings, offices and schools are covered. In accordance with the composition of Berlin Hyp's Green Finance Portfolio, only the values for multi-family dwellings and offices are considered for the present calculation. Values for selected relevant countries/cities (Berlin, Vienna, Prague, Paris and Helsinki) are averaged to obtain a robust baseline.

As a result, 207.1 kWh/m²*year is derived as a baseline of energy efficiency for European existing offices¹⁰ and 162.6 kWh/m²*year is derived as baseline of energy efficiency for existing European multi-family dwellings.

Baseline 1:

Average energy efficiency of existing European buildings

This set of values allows an estimate to be made of the energy savings in green buildings in Berlin Hyp's green finance portfolio compared to current standards in Germany, and the values have been cross-validated against other sources¹¹. As a result, values of energy efficiency baselines for current standards vary from 50 kWh/m²*year for multi-family dwellings to 135 kWh/m²*year for office buildings.

D.4 Carbon intensity of energy consumed by real estate sector

24 out of the 59 green building financings are collateralized by properties situated in Germany, 15 by properties situated in Poland and seven by properties in the Netherlands. In addition, ten are collateralized by properties situated in the Czech Republic, two by properties in France and one by a property in Belgium. Carbon intensities of energy used by the commercial real estate sector are quite stable year on year.

9 ENTRANZE, März 2014. Heating and cooling energy demand and loads for building types in different countries of the EU – D2.3. of WP2 of the Entranze Project. www.entranze.eu/files/downloads/D2_3/Heating_and_cooling_energy_demand_and_loads_for_building_types_in_different_countries_of_the_EU.pdf

10 Used for all commercial properties in Berlin Hyp's carbon reporting, as ENTRANZE does not contain data for other commercial real estate than office buildings.

11 Economidou M., March 2012, Energy Performance Requirements for buildings in Europe, REHVA Journal. www.rehva.eu/fileadmin/hvac-dictio/03-2012/energy-performance-requirements-for-buildings-in-europe.pdf
Kemna, R. and Moreno Acedo, J., August 2014, Average EU building heat load for HVAC equipment, Final Report. ec.europa.eu/energy/sites/ener/files/documents/2014_final_report_eu_building_heat_demand.pdf

Country	kg CO ₂ /kWh final energy demand	Δ yoy
Germany	0.345	-0.006
Netherlands	0.315	0.013
Poland	0.542	0
France	0.149	0.003
Czech Republic	0.462	0.012
Belgium	0.219	-

The detailed calculation of these values is presented in the Appendix.

Contact



Bodo Winkler
Head of Funding & Investor Relations
T +49 30 2599 9550
F +49 30 2599 9564
bodo.winkler@berlinhyp.de



Felix Zillmann
Funding & Investor Relations
T +49 30 2599 9550
F +49 30 2599 9989529
felix.zillmann@berlinhyp.de

Appendix

The energy mix of commercial real estate in Germany, the Netherlands, Poland, France, Czech Republic and Belgium is available in the ENTRANZE project.¹² The following table summarises the share of each energy source used by commercial buildings for their various usages (power, heating/cooling, any other use).

Country	Electricity & Heat (%)	Gas (%)	Oil (%)	Coal (%)	Biomass (%)
Germany	41.6	40.6	16.2	0.1	1.5
Netherlands	40.5	54.9	3.2	0	1.4
Poland	56.8	23.1	7.7	2.4	10.0
France	50.5	32.7	16.8	0	0
Czech Republic	52.6	42.8	0.5	2.6	1.5
Belgium	40.4	35.8	23.7	0	0.1

Electricity and heat are often provided together as many buildings rely on local networks for their power and heating. In that case, it is assumed that the energy mix corresponds to the country average energy mix.

¹² www.entranze.enerdata.eu/total-unit-consumption-per-m2-in-non-residential-at-normal-climate.html

Carbon emissions from the combustion of fossil fuels are assumed to be constant in different countries. Their values are calculated from the International Energy Agency data (2017 Edition¹³) and equate to the values in the 2016 edition:

Gas	15.3 kg C/GJ = 0.202 kg CO₂/kWh
Oil	21.1 kg C/GJ = 0.279 kg CO₂/kWh
Coal	26.8 kg C/GJ = 0.354 kg CO₂/kWh
Biomass	0.201 kg CO₂/kWh¹⁴

Carbon emissions from the electricity used in the real estate sector are related to the electricity production energy mix. It varies strongly among the European countries. Corresponding emission factors are also estimated from the International Energy Agency data.

Corresponding carbon emissions are available in the International Energy Agency database of CO₂ Emissions:¹⁶

Country	Electricity (ktoe)	Heat (ktoe)	Total (ktoe)	Total (TWh)	Δ Total (TWh) PY
Germany	44,267	9,593	53,859	626.4	7.1
Netherlands	8,868	2,463	11,330	131.8	-0.2
Poland	10,992	5,461	16,454	191.4	2.1
France	36,543	2,347	38,890	452.3	11.1
Czech Republic	4,685	2,081	6,766	78.7	-2.7
Belgium	7,027	512	7,539	87.7	-

ktoe = kilo ton of oil equivalent

The carbon intensity of the electricity and heat consumption is obtained by the following formula:¹⁷

Country	Electricity and Heat Carbon Intensity (mt CO ₂ /Jahr)	Δ yoy
Germany	322.8	-4.8
Netherlands	62.6	4.3
Poland	150.0	1.7
France	32.6	3.7
Czech Republic	54.2	0
Belgium	17.4	-

13 IEA, 2017, Fuel Combustion Highlights – Carbon Content Values (kg C/GJ). www.iea.org/publications/freepublications/publication/CO2EmissionsfromFuelCombustionHighlights2017.pdf

14 Source: www.eumayors.eu/IMG/pdf/technical_annex_en.pdf, (if wood is harvested in a sustainable manner) to 0.403 kg CO₂/kWh (if wood is harvested in unsustainable manner). The mean value is considered in this case.

15 No more-recent data is available.

16 The data is extracted from the IEA Headline Energy Data 2017. <http://www.iea.org/statistics/>

17 www.iea.org/publications/freepublications/publication/CO2EmissionsfromFuelCombustionHighlights2017.pdf

The carbon intensity of the electricity and heat consumption is obtained by the following formula:

$$\text{Electricity \& Heat Carbon Intensity} = \frac{\text{CO}_2 \text{ Emissions of Electricity \& Heat Production}}{\text{Electricity \& Heat Total Consumption}}$$

The formula yields the following results for each country:

Country	Electricity and Heat Carbon Intensity (kg CO ₂ /kWh final)	Δ yoy
Germany	0.515	-0.014
Netherlands	0.475	0.033
Poland	0.784	0
France	0.072	0.006
Czech Republic	0.689	0.023
Belgium	0.198	-

The average of carbon intensities weighted by the energy mix of the real estate sector in the respective geographic region is as follows:

RE Energy Mix Carbon Intensity =

$$\sum \frac{\text{Carbon Intensity (Energy)} \times \text{Share (Energy)}}{\text{Energy mix}}$$

This gives the following factors that are essential for the impact report:

Country	kg CO ₂ /kWh Endenergiebedarf	Δ yoy
Germany	0.345	-0.006
Netherlands	0.315	0.013
Poland	0.542	0
France	0.149	0.013
Czech Republic	0.462	0.012
Belgium	0.219	-

Publisher

Berlin Hyp AG
Treasury
Budapester Strasse 1 · 10787 Berlin
T +49 30 2599 9550
F +49 30 2599 9564
gruener-pfandbrief@berlinhyp.de

Design

–endash
Jörg Kammler
Winsstrasse 58 · 10405 Berlin
T +49 30 4431 7337
M +49 163 373 55 66
www.endash.de

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**Never underestimate
the power
of your impact!**