

Second-Party Opinion

Berlin Hyp Sustainability-Linked Bond Framework



Evaluation Summary

Sustainalytics is of the opinion that the Berlin Hyp Sustainability-Linked Bond Framework aligns with the Sustainability-Linked Bond Principles 2020. This assessment is based on the following:

- **Selection of Key Performance Indicator (KPI)** Berlin Hyp Sustainability-Linked Bond Framework includes one KPI: Carbon intensity of loan portfolio (see Table 1). Sustainalytics considers the KPI chosen to be strong based on its applicability and the relevance and materiality to the subindustry.
- **Calibration of Sustainability Performance Target (SPT)** Sustainalytics considers the SPT to be aligned with the issuer's sustainability strategy. Sustainalytics notes that the SPT i) goes beyond business-as-usual, ii) clearly exceeds peer performance/targets and iii) aligns with a well-below-2-degree climate scenario. As such, Sustainalytics is of the opinion that the SPT is ambitious and demonstrates industry leadership.
- **Bond Characteristics** Berlin Hyp AG will link the bond's financial/structural characteristics to the achievement of the SPT, namely a step-up (or potentially a step-down) in coupon-rate. To trigger a step-up in coupon, the SPT needs to be missed.
- **Reporting** Berlin Hyp AG commits to report on an annual basis on its performance on the KPI in its Sustainability-Linked Bond Report, which will be made available on its website. The reporting commitments are aligned with the SLBP.
- **Verification** Berlin Hyp AG commits to have external reasonable assurance conducted on its KPI performance throughout the term of its Sustainability-Linked Bonds and at the communicated SPT deadline, which is aligned with market expectations.

Evaluation Date	February 26, 2021
Issuer Location	Berlin, Germany

The SPT contribute to the following SDGs:



Overview of KPI and SPT

KPI	Baseline 2020	SPT	Strength of the KPI	Ambitiousness of SPT
Carbon intensity of loan portfolio	38.6 kgCO ₂ /m ²	Reduce loan portfolio's carbon intensity by 40% between 2020 and 2030	Strong	Ambitious



Table of Contents

Scope of Work and Limitations.....	3
Introduction	4
Sustainalytics' Opinion	4
Section 1: Sustainalytics' Opinion on the Alignment of Berlin Hyp AG's Sustainability-Linked Notes with the Sustainability-Linked Bond Principles.....	4
Selection of Key Performance Indicator (KPI)	5
Calibration of Sustainability Performance Target (SPT)	5
Bond Characteristics	7
Reporting	9
Verification	9
Section 2: Assessment of Berlin Hyp AG's Sustainability Strategy	10
Section 3: Impact of the SPT chosen	11
Conclusion	12
Appendix 1	13



Scope of Work and Limitations

Berlin Hyp AG (the “Bank” or the “Company”) has engaged Sustainalytics to review the SLB Framework and provide an opinion on the alignment of the notes with the Sustainability-Linked Bond Principles (SLBP).¹

Sustainalytics’ Second-Party Opinion reflects Sustainalytics’ independent² opinion on the alignment of the reviewed SLB Framework with the Sustainability-Linked Bond Principles 2020, as administered by ICMA.

As part of this engagement, Sustainalytics exchanges information with various members of Berlin Hyp AG’s management team to understand the sustainability impact of their business processes and SPT, as well as reporting and verification processes of aspects of the SLB Framework. Berlin Hyp AG’s representatives have confirmed that:

- (1) They understand it is the sole responsibility of issuer to ensure that the information provided is complete, accurate or up to date;
- (2) They have provided Sustainalytics with all relevant information; and
- (3) Any provided material information has been duly disclosed in a timely manner.

Sustainalytics also reviewed relevant public documents and non-public information. This document contains Sustainalytics’ opinion of the Bond Framework and should be read in conjunction with the Framework. Any update of the present Second-Party Opinion will be conducted according to the agreed engagement conditions between Sustainalytics and Berlin Hyp AG. Sustainalytics’ Second-Party Opinion, while reflecting on the alignment of the Framework with market standards, is no guarantee of alignment nor warrants any alignment with future versions of relevant market standards. Furthermore, Sustainalytics’ Second-Party Opinion addresses the anticipated SPT of KPI but does not measure the KPI’s performance. The measurement and reporting of the KPI is the responsibility of the Bond issuer. No information provided by Sustainalytics under the present Second-Party Opinion shall be considered as being a statement, representation, warrant or argument either in favor or against, the truthfulness, reliability or completeness of any facts or statements and related surrounding circumstances that Berlin Hyp AG has made available to Sustainalytics for the purpose of this Second-Party Opinion.

The Second-Party Opinion is valid for issuances aligned with the respective Framework for which the Second-Party Opinion was written and aligned with the methodology to calculate the KPI performance outlined in the Second-Party Opinion up to 24 months or until one of the following occurs:

- (1) A material change to the external benchmark³ against which target were set;
- (2) A material corporate action (such as material M&A or change in business activity) which has a bearing on the achievement of the SLBs or the materiality of the KPI.

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¹ The Sustainability Linked Bond Principles (SLBP) were launched by ICMA in June 2020. They are administered by the ICMA and are available at: <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/June-2020/Sustainability-Linked-Bond-PrinciplesJune-2020-100620.pdf>

² When operating multiple lines of business that serve a variety of client types, objective research is a cornerstone of Sustainalytics and ensuring analyst independence is paramount to producing objective, actionable research. Sustainalytics has therefore put in place a robust conflict management framework that specifically addresses the need for analyst independence, consistency of process, structural separation of commercial and research (and engagement) teams, data protection and systems separation. Last but not the least, analyst compensation is not directly tied to specific commercial outcomes. One of Sustainalytics’ hallmarks is integrity, another is transparency.

³ Benchmarks refers to science based benchmarks



Introduction

Berlin Hyp is a commercial real estate financier and mortgage lender focused in metropolitan German areas and foreign European markets. The Bank was founded in 1868 and is headquartered in Berlin, Germany.

Berlin Hyp AG ("Berlin Hyp") intends to issue Sustainability-Linked Bonds (SLB) where either the coupon rate of the bond or the repayment amount at maturity of the bond is tied to the achievement of the Sustainability Performance Target for one KPI related to decreasing the Bank's loan portfolio carbon intensity.

Berlin Hyp has engaged Sustainalytics to review the SLB Framework and provide an opinion on the alignment of the bond framework with the Sustainability-Linked Bond Principles (SLBP).⁴

The KPI and SPT used by Berlin Hyp are defined in Tables 1 and 2 below.

Table 1: KPI Definitions

KPI	Definition
Carbon intensity of loan portfolio	The KPI is defined as the carbon intensity of all buildings financed by the total of all loans granted by Berlin Hyp, forming the bank's loan portfolio. The carbon intensity of its loan portfolio is expressed in percentage (%) compared to the 2020 baseline. Carbon intensity is calculated as the ratio of the aggregated CO₂ emissions from all commercial real estate financed by Berlin Hyp by total financed areas: CI = kgCO₂/m²/a Carbon intensity calculation includes Scope 1 and 2 carbon emissions⁵ from energy demand for heating and electricity. Carbon emissions are calculated using Berlin Hyp's Carbon Footprint Assessment Methodology. Berlin Hyp will use collected or estimated data to calculate buildings' energy demand and energy-sources-specific carbon conversion factors. For detailed information please refer to Appendix 1: Berlin Hyp Carbon Footprint Assessment Methodology.

Table 2: SPT and Past Performance

KPI	2019	2020 (baseline)	SPT 2030
Carbon intensity of loan portfolio	40.3 kgCO ₂ /m ²	38.6 kgCO ₂ /m ²	Reduce loan portfolio's carbon intensity by 40% between 2020 and 2030

Sustainalytics' Opinion

Section 1: Sustainalytics' Opinion on the Alignment of Berlin Hyp Sustainability-Linked Bond Framework with the Sustainability-Linked Bond Principles.

Sustainalytics is of the opinion that the Sustainability-Linked Bond Framework aligns with the five core components of the Sustainability-Linked Bond Principles 2020 (SLBP).

⁴ The Sustainability Linked Bond Principles (SLBP) were launched by ICMA in June 2020. They are administered by the ICMA and are available at: <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/sustainability-linked-bond-principles-slbp/>

⁵ Scope 1: All direct GHG emissions from owned or controlled sources. Scope 2: Indirect GHG emissions from consumption of purchased electricity, heat or steam, GHG Protocol, at: <https://ghgprotocol.org/calculation-tools-faq>



Selection of Key Performance Indicator (KPI)

Relevance and Materiality of KPI

Sustainalytics in its assessment of materiality and relevance considers i) whether an indicator speaks to a material impact of the issuer's business on environment or social issues, and ii) to what portion of impact the KPI is applicable.

Sustainalytics considers the KPI to be material and relevant given that the Bank's primary activity is commercial real estate financing and, as such, the primary environmental impact of the Bank's loan portfolio is tied to the carbon intensity of the financed assets. In Berlin Hyp's 2019 Annual Report, the Bank released the results of its materiality assessment, which was conducted in line with the Global Reporting Initiative Sustainability Reporting Standards. The materiality assessment clearly demonstrates that the sustainability of the Bank's loan portfolio is a material and relevant issue for the Bank's sustainability strategy. Acknowledging these results, the Bank has incorporated sustainability targets into its Sustainability Agenda, including increasing its share of loans for energy efficient green buildings in Berlin Hyp's portfolio by 2025.

Based on the above, Sustainalytics is of the opinion that the KPI speaks to a material environmental impact of the Bank's business and is applicable to a relevant portion of its loan portfolio's carbon emissions.

KPI Characteristics

Sustainalytics in its assessment of the KPI characteristics considers i) whether a clear and consistent methodology is used, ii) whether the issuer follows an externally recognized definition, iii) whether the KPI are a direct measure of the performance of the issuer on the material environmental or social issue, and iv) if applicable, whether the methodology can be benchmarked to an external contextual benchmark.⁶

Sustainalytics considers Berlin Hyp's definition and methodology to calculate KPI performance to be clear and consistent and is based on a variety of credible external data sources. Sustainalytics notes that the KPI's definition for carbon intensity is based on credible external sources, including the IPCC, AIB European Residual Mixes Report and relevant European country level data. In addition, the KPI is directly related to the performance of the Issuer's loan portfolio. Sustainalytics notes that the KPI calculation methodology has been developed internally and as such does not lend itself to external benchmarking, nonetheless, Sustainalytics considers it to be credible.

Overall Assessment

Sustainalytics overall considers the KPI to be strong given its applicability, relevance and materiality to the subindustry, and chosen proprietary methodology.

Carbon intensity of loan portfolio	Not Aligned	Adequate	Strong	Very strong
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Calibration of Sustainability Performance Target (SPT)

Alignment with Issuer's Sustainability Strategy

Berlin Hyp has set the following SPT for its KPI:

- Reduce loan portfolio's carbon intensity by 40% between 2020 and 2030.

Sustainalytics considers the SPT to be aligned with Berlin Hyp's sustainability strategy (please refer to Section 2 for analysis of the credibility of Berlin Hyp's sustainability strategy).

⁶ External contextual benchmarks provide guidance on the alignment with ecological system boundaries.



Berlin Hyp's sustainability strategy is aimed at continuous CO₂ reduction until climate neutrality in 2050, which is underlined by its commitment to the Paris Agreement and the Climate Paths of the Federal Republic of Germany. The Bank's sustainability strategy is aligned with a well-below-2-degree climate scenario and targeting 1.5-degrees. Berlin Hyp's sustainability strategy is documented in its Sustainability Agenda, which consists of four building blocks: (i) Commitment to the Paris Agreement and the Climate Paths of the Federal Republic of Germany; (ii) 1/3 share of loans for energy-efficiency green buildings in Berlin Hyp's loan portfolio by 2025; (iii) Portfolio transparency by 2023 – systematic determination of energy performance, carbon and climate risks within Berlin Hyp's overall loan portfolio; (iv) Introduction of another sustainability product: Transformationskredit (transformation loan). For further information on Berlin Hyp's sustainability strategy, please refer to Section 2. Each of these four pillars demonstrate Berlin Hyp's commitment to reducing the carbon footprint of its loan portfolio.

Based on the above, Sustainalytics is of the opinion that Berlin Hyp's SPT for carbon intensity reduction rate of its loan portfolio is well-aligned with the Issuer's sustainability strategy.

Strategy to Achieve the SPT

Berlin Hyp intends to achieve the SPT through the strategy outlined in its Sustainability Agenda, which is discussed above. Guided by the four building blocks of the Agenda, the Bank's strategy to reduce its carbon emissions will include: prioritizing the financing of green loans for energy efficient buildings; achieving portfolio transparency – which will allow Berlin Hyp to calculate its loan portfolio's carbon emissions for a more precise and accurate determination of an energy transition path; and the development of a new green loan product (Transformationskredit) to incentivize and support borrowers to transform their properties.

In addition to the above, Sustainalytics notes that the Bank's strategy to achieve a 40% carbon intensity reduction by 2030 is also relying on assumed governmental action and market trends. Increased political pressure is expected to result in the development of new laws, regulations, updates in other relevant standards and new innovations in technical/engineering solutions. Berlin Hyp also expects a significant increase in refurbishment projects in the real estate sector, which the Bank aims to encourage through its own lending practices and will play an increasingly important role in the loan portfolio. Finally, the expected transition in the energy sector, including the increase in renewable energy generation, which will contribute to decreased CO₂ emissions in the real estate sector.

Ambitiousness, Baseline and Benchmarks

To determine the ambitiousness of the SPT, Sustainalytics considers whether the SPT i) goes beyond business-as-usual trajectory, ii) how the SPT compares to targets set by peers, iii) and how the SPT compare with science.⁷

Berlin Hyp has set the baseline for the SPT at 2020, with the ambition to achieve a 40% reduction of Scope 1 and 2 GHG emissions of its loan portfolio by 2030.

SPT: Sustainalytics was able to use the following benchmarks to assess ambitiousness: past performance of the Bank, peer performance and a comparison of the SPT against the Scope 1 and 2 emissions from buildings as provided by IEA ETP 2017. For the comparison against IEA ETP 2017 trajectory, Sustainalytics applied the assessment proposed by Science-Based Target Initiative, using the convergence principle and assessment methodology as proposed for the Financial Sector Science-Based Targets Guidance.⁸ Sustainalytics notes that, although Berlin Hyp's calculation methodology for its KPI does not lend itself well to direct comparison with an external benchmark, in order to determine the level of ambitiousness, Sustainalytics utilized the data provided to make an assessment against the SBTi guidance. Additionally, Sustainalytics notes that the Financial Sector Science-Based Targets Guidance documents is still in consultation phase. This comparison demonstrated that Berlin Hyp's SPT aligns with a well-below-2-degree climate scenario by 2050.

Sustainalytics considers the SPT to go beyond a business-as-usual trajectory and represents a substantial reduction in carbon emissions compared to the 2020 baseline. In addition, the SPT clearly exceeds that of industry

⁷ We refer here to contextual benchmarks, that indicate the alignment of targets with ecosystem boundaries.

⁸ SBTi, "Financial Sector Science-Based Targets Guidance", (2020), at: <https://sciencebasedtargets.org/resources/files/Financial-Sector-Science-Based-Targets-Guidance-Pilot-Version.pdf>



peers, Berlin Hyp is notable as the first bank to commit to a quantitative, time-bound for reducing scope 1 and scope 2 carbon emissions for its loan portfolio.⁹

Based on the above, Sustainalytics acknowledges that Berlin Hyp's SPT i) goes beyond business-as-usual, ii) clearly exceeds peer performance/targets and iii) aligns with a well-below-2-degree climate scenario. As such, Sustainalytics is of the opinion that the SPT is ambitious and demonstrates industry leadership. Berlin Hyp could further improve their ambitiousness by aligning with a <1.5-degree scenario.

Overall Assessment

Sustainalytics considers the SPT to align with Berlin Hyp AG's sustainability strategy and considers Berlin Hyp's SPT to be ambitious given that it presents a material improvement compared to past performance, exceeds peer performance/targets and aligns with a well-below-2-degree climate scenario. Additionally, the Issuer has not disclosed the term of the bond as of the date of this evaluation. Sustainalytics' assessment of ambitiousness of the Issuer's SPTs is based solely on the provided trajectory toward their 2030 SPT and does not take the bond term into consideration.

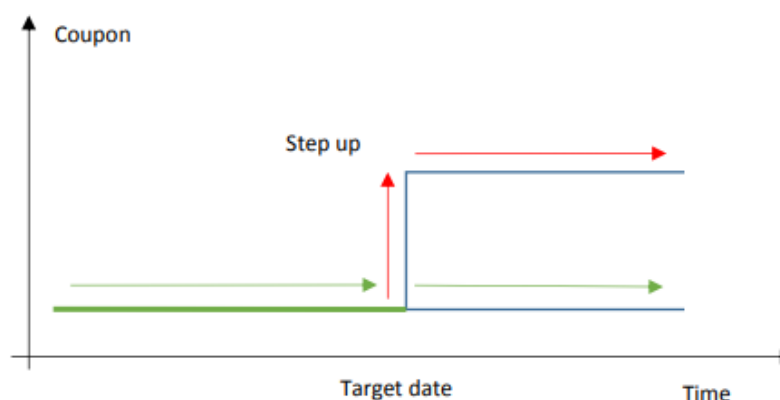
Reduce loan portfolio's carbon intensity by 40% between 2020 and 2030 (Carbon intensity reduction rate of loan portfolio)	Not Aligned	Moderately Ambitious	Ambitious	Highly Ambitious
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Bond Characteristics

Berlin Hyp AG has disclosed four potential structures for its bond characteristics, which are as follows:

- Structure #1 Coupon step-up(s)
 - **1.1 Single coupon step-up:** A coupon step-up is applied from the first coupon payment date following the SPT observation date until the maturity date of the bond if the target is not achieved (red line in the figure below). The coupon remains at its initial level if the SPT is achieved (green line in the figure below). If the chosen SPT observation date is scheduled within one year to maturity or at maturity of the SLB the potential coupon increase applies to the last coupon only.



- **1.2 Two coupon step-ups:** Upon the first coupon payment date following the first SPT observation date, a first coupon step-up shall be applied until the second SPT observation date if the first SPT is not achieved (orange line in the figure below). The coupon remains at its initial level if the first SPT is achieved (green line in the figure below);

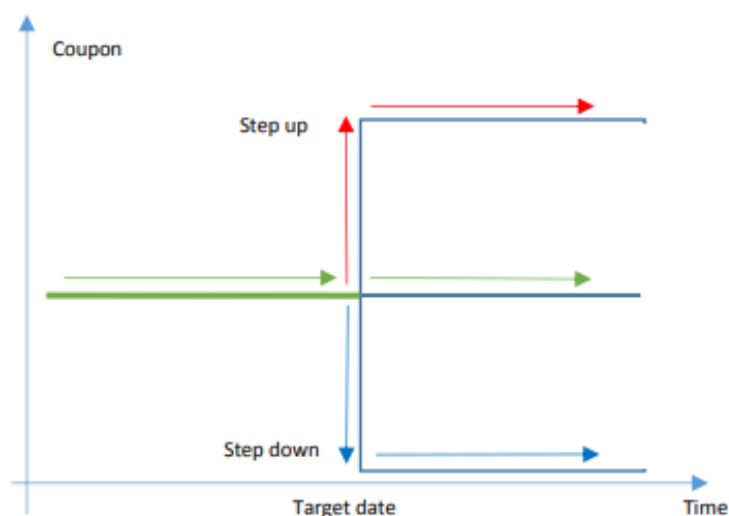
⁹ For example, peers including Rabobank, Caja Rural de Navarra and Achmea Bank have not established any targets related to reduction of scope 1 and 2 emissions from their loan portfolios.



- Upon the first coupon payment date following the second SPT observation date, a second coupon-step (higher than the first coupon step-up) shall be applied until the maturity date of the bond if the second SPT is not achieved, irrespective of the achievement of the first SPT (red line in the figure below). Otherwise, the coupon remains or reverts to its initial level. The latter applies if it has been increased at the first SPT observation date (in green in the figure below).



- Structure #2 Coupon step-down
 - A coupon step-down shall be applied from the first coupon payment date following the SPT observation date until the maturity date of the bond if the target is substantially over-achieved (i.e. 10% or more at the SPT observation date, e.g. 50% carbon intensity reduction by 2030; blue line in the figure below). The coupon remains at its initial level Step up 1 Step up 2 Target date 1 Target date 2 Coupon Step up Target date Time Coupon if the SPT is achieved but not substantially over-achieved (green line in the figure below). If the chosen SPT observation date is scheduled within one year ahead of the maturity date, the potential coupon decrease applies to the last coupon only. A coupon step-down may only be applied to a Berlin Hyp SLB in combination with a coupon step-up feature.



- Structure #3 Higher repayment amount:
 - If the SPT is not achieved on its observation date, the final repayment is increased by a certain amount, which is determined before issuance and documented in the SLB's final terms.



Sustainalytics positively notes that if Berlin Hyp fails to meet the SPT, it will result in a step-up of the coupon rate. Sustainalytics further notes that at the time of writing this opinion the Issuer has not disclosed the term of the bond or the specific structure which will be used. The specific structure and related information will be disclosed to investors at the time of issuance.



Reporting

Berlin Hyp commits to report on an annual basis on its performance on the KPI and expects to include the relevant figures in its Annual Sustainable Linked-Bond Report, which will be available on its website and is aligned with the SLB Principles. Berlin Hyp further commits to disclose relevant information that enabling investors to monitor the level of ambition of the SPT.



Verification

Berlin Hyp commits to having an external verifier provide reasonable assurance on the published KPI performance figures for each fiscal year/ on the KPI performance at the SPT deadline, which is aligned with the SLB Principles on verification.



Section 2: Assessment of Berlin Hyp's Sustainability Strategy

Credibility of Berlin Hyp Sustainability Strategy

As per Sustainalytics' ESG rating report, Berlin Hyp is considered be a leader on ESG issues compared to its industry peers. The Bank's sustainable finance activities and ESG related issues are directly overseen by the ESG Board, which is chaired by the Bank CEO.¹⁰

Berlin Hyp is committed to promoting energy efficient commercial real estate as its core business through interest-rate incentives,¹⁰ and is focused on becoming a green financier.¹¹ Consistent with its overall strategy, in August 2020, Berlin Hyp published its Sustainability Agenda in alignment with the 2050 climate neutrality goal of the Federal Republic of Germany.¹² The Sustainability Agenda is based on the following four pillars: (i) Commitment to the Paris Agreement and the Climate Paths of the Federal Republic of Germany – including CO₂ emissions reduction from the building sector by 40% between 2020 and 2030, (ii) Increase the share of green buildings to one-third of loans portfolio until 2025 – lending decisions guided by energy efficiency considerations, (iii) Portfolio transparency until 2023, systematic determination of energy values – CO₂ and climate risks, and (iv) Introduction of a further sustainability product: the Transformationskredit (transformation loan) – financial incentive for energy-related refurbishment measures.¹²

Berlin Hyp demonstrates progress and commitment towards its timebound goals. As of December 2020, the Bank's green finance portfolio amounted to EUR 6.0 billion, representing 22% of its total loan book.¹³ The GHG emissions per million euros of mortgage loan volume decreased by 28.9%, from 2016 to 2019.¹⁴ Additionally, between April 2015 and September 2020, Berlin Hyp has issued 12 green bonds, the proceeds have refinanced loans for energy-efficient green buildings, totalling EUR 5.15 billion.¹⁵ Berlin Hyp commits to, in a best effort basis, to invest an amount equivalent to the net proceeds of a green bond in new eligible business during the bond's term. These issuances positioned Berlin Hyp as one of the most active European bank issuers of green bonds, demonstrating its leadership in the sustainable capital markets focused on green buildings and energy efficiency of commercial properties.¹⁶ With the issuance of SLBs, Berlin Hyp aims to solidify its place as an issuer on the ESG capital market and extends its pure asset-based approach to one that considers the Bank's overall ESG performance.

Sustainalytics positively notes that Berlin Hyp is the first bank to consider issuing a Sustainability-Linked Bond to finance its sustainability strategy and considers the Bank to have a strong sustainability strategy with clear and ambitious targets.

Berlin Hyp's Environmental and Social Risk Management

Overall, Sustainalytics notes that the ESG risk management of Berlin Hyp is considered strong, and its overall exposure is low compared to subindustry peers. Sustainalytics also recognizes that while Berlin Hyp's defined targets are impactful, it is acknowledged that achieving the SPT bears environmental and social risks related to waste generated during construction and refurbishment activities, land-use change, biodiversity loss, and worker health and safety associated with property development and construction. Berlin Hyp's ability to mitigate such potential risks is demonstrated through the following:

- Berlin Hyp's Environmental Policy ensures: (i) compliance with the legal provisions and other requirements, as well as with company guidelines regarding corporate environmental protection and the external environmental impact of its business activities, (ii) active avoidance of unnecessary environmental pollution, including the environmental impact of the portfolios financed, and (iii) measurement of the environmental impact of its portfolio.¹⁷
- In 2016, Berlin Hyp' introduced its environmental management system (EMS), to ensure implementation of its environmental policy and all relevant legal provisions and other binding requirements.¹⁴ The EMS is validated in

¹⁰ Berlin Hyp, "Sustainability Management", at: <https://www.berlinhyp.de/en/about-us/sustainability/management-instruments>

¹¹ Berlin Hyp, "Ecology", at: <https://www.berlinhyp.de/en/about-us/sustainability/ecology>

¹² Berlin Hyp, "Sustainability Agenda of Berlin Hyp", (2020), at: <https://www.berlinhyp.de/files/media/corporate/ueber-uns/nachhaltigkeit/management-instrumente/bhyp-in-gb2020-pdf-6-nachhaltigkeitsagenda-eng-01.pdf>

¹³ Berlin Hyp, "Sustainability-Linked Bond Framework", at: www.berlinhyp.de

¹⁴ Berlin Hyp, "Updated Environmental Statement. Berlin Hyp AG 2019", (2020), at: <https://www.berlinhyp.de/en/about-us/sustainability/ecology?file=files/media/corporate/ueber-uns/nachhaltigkeit/oekologie/de/berlin-hyp-updated-environmental-statement-2019.pdf>

¹⁵ Berlin Hyp, "Green Bonds of Berlin Hyp - a Sustainable Investment", at: <https://www.berlinhyp.de/en/investors/green-bonds>

¹⁶ Berlin Hyp, "Berlin Hyp issues its eighth Green Bond since 2015", (2019), at: <https://www.berlinhyp.de/en/about-us/sustainability/latest-news/berlin-hyp-issues-its-eighth-green-bond-since-2015>

¹⁷ Berlin Hyp, "Environmental Policy", at: <https://www.berlinhyp.de/en/about-us/sustainability/ecology?file=files/media/corporate/ueber-uns/nachhaltigkeit/oekologie/environmental%20policy.pdf>



accordance with EMAS,¹⁸ and is certified annually in accordance with DIN EN ISO 14001¹⁹ environmental management standard.¹⁴

- Per Sustainalytics' ESG rating report, there is no evidence of Berlin Hyp's involvement in any relevant environmental, social or governance controversies.
- Regarding worker health and safety, the EU Directive on Worker Health and Safety ensures minimum safety and health requirements throughout Europe. Employers must "ensure the safety and health of workers in every aspect related to the work." Necessary measures due to be taken by the employers include "prevention of occupational risks and provision of information and training, as well as provision of the necessary organization and means."²⁰
- Projects that may be assessed to pose a risk to the environment must comply with European Union (EU) Environmental Impact Assessment (EIA) Directive for development projects within the EU. The EIA Directive is aimed at ensuring that projects which are likely to have significant impact on the environment are adequately assessed before approval. With respect to biodiversity, the Directive instructs that measures must be taken to "avoid, prevent, reduce and, if possible, offset significant adverse effects on the environment, in particular on species and habitats."²¹

Overall, Sustainalytics considers that Berlin Hyp has strong management programs and policies to mitigate risks that could emerge from the Company's commercial real estate financing activities.

Section 3: Impact of the SPT Chosen

Impact of reducing buildings' carbon intensity to achieve emission reduction goals

The Paris Agreement of 2015 established the goal to limit global warming to well below 2°C.²² In 2019, the IPCC released a special report which highlighted the need to limit global warming to 1.5°C above preindustrial levels.²³ In order to curb global warming effectively, global GHG emissions must peak as soon as possible.²² Countries should implement actions aligned with the Paris Agreement. For example, the "Climate Action Plan 2050 – Germany's long-term low greenhouse gas emission development strategy" defines Germany's roadmap to climate-neutrality by 2050.²⁴

In this context, the relevance of buildings and construction is highlighted as a major source of GHG emissions²⁵. According to the UN Environmental Program the sector accounts for 38% of all energy-related CO₂ emissions,²⁶ and the global final energy demand of buildings continues to grow, 1% from 2017, and 7% from 2010.²⁷ In order to get on track for the zero carbon buildings by 2050, the contribution of buildings to GHG emissions must decrease by 50% by 2030.²⁶ Buildings have significant potential to reduce GHG emissions through improved operational energy efficiency,²⁵ and, taking climate action in buildings and construction is one of the most cost-effective means to mitigate GHG emissions.²⁷ Thus, energy efficient buildings are key to achieve the goals set forth by the Paris Agreement and national strategies.

To address this issue, in Germany the Energy Efficiency Strategy for Buildings proposes increased share of renewable energy sources in building's energy consumption, reduction of primary energy consumption, and improved energy efficiency of buildings

¹⁸ EU Eco-Management and Audit Scheme (EMAS) is a premium management instrument developed by the European Commission for companies and other organisations to evaluate, report, and improve their environmental performance.

¹⁹ ISO, "ISO 14001:2015. Environmental management systems", at: <https://www.iso.org/standard/60857.html>

²⁰ EU, "Directive 89/391/EEC on the introduction of measures to encourage improvements in the safety and health of workers at work", (1989), at: <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:31989L0391&from=FR>

²¹ EU, "Directive 2014/52/EU on the assessment of the effects of certain public and private projects on the environment", (2014), at: <https://eurlex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32014L0052>

²² UNFCCC, "The Paris Agreement", at: <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

²³ IPCC, "Global warming of 1.5°C", (2019), at: https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_Low_Res.pdf

²⁴ BMU, "Climate Action Plan 2050", at: <https://www.bmu.de/en/topics/climate-energy/climate/national-climate-policy/greenhouse-gas-neutral-germany-2050/>

²⁵ Röck, M. et al, (2020), "Embodied GHG emissions of buildings – The hidden challenge for effective climate change mitigation", Applied Energy, at: <https://www.sciencedirect.com/science/article/pii/S0306261919317945#aep-article-footnote-id1>

²⁶ UNEP, "Building sector emissions hit record high, but low-carbon pandemic recovery can help transform sector – UN report", (2020), at: <https://www.unenvironment.org/news-and-stories/press-release/building-sector-emissions-hit-record-high-low-carbon-pandemic>

²⁷ IEA, "2019 Global Status Report for Buildings and Construction", (2019), at: https://webstore.iea.org/download/direct/2930?fileName=2019_Global_Status_Report_for_Buildings_and_Construction.pdf



as strategic methods to achieving climate-neutral buildings stock.²⁸ Germany demonstrates progress in terms of GHG reduction from the building sector as it has declined by 42% from 1990 to 2019.²⁹ This is in line with the country's roadmap for buildings to be climate neutral by 2050 with an interim target of 67% reduction by 2030 (versus 1990 levels).³⁰ Additionally, global spending in energy-efficient buildings increased, by 3% in 2019, compared to 2018.²⁶

Based on the above context, Berlin Hyp's investments in achieving 40% reduction of carbon intensity of its loan portfolio to commercial real estate will help contribute meaningfully to the Paris Agreement climate goals while reducing the carbon footprint of the building sector.

Alignment with/contribution to SDGs

The Sustainable Development Goals (SDGs) were set in September 2015 and form an agenda for achieving sustainable development by the year 2030. This sustainability linked bonds advances the following SDG goals and targets:

KPI	SDG	SDG Target
Carbon intensity of loan portfolio	11. Sustainable Cities and Communities	11.3 Ensure inclusive and sustainable urbanization, planning and management

Conclusion

Berlin Hyp AG intends to issue Sustainability-Linked Bonds which will tie the coupon rate to the achievements of the following SPT:

- (1) Carbon intensity of loan portfolio: Reduce loan portfolio's carbon intensity by 40% between 2020 and 2030;

Sustainalytics considers the KPI chosen to be strong based on its relevance, materiality, methodology and benchmark-ability and the SPT to be ambitious based on the substantial improvement from historical performance, the comparison against peers and its alignment with a well-below 2-degree climate scenario.

Furthermore, Sustainalytics considers reporting and verification commitments to be aligned with market expectations.

Based on the above, Sustainalytics considers Berlin Hyp AG's SLB Framework to be in alignment with the five core components of the SLBP and the prospective of achievement of the SPT to be impactful.

²⁸ BMU, "Energy Efficiency Strategy for Buildings. Methods for achieving a virtually climate-neutral building stock", (2015), at: https://www.bmu.de/Redaktion/EN/Publikationen/energy-efficiency-strategy-buildings.pdf?__blob=publicationFile&v=7

²⁹ Clean Energy Wire, "Germany's greenhouse gas emissions and energy transition targets", (2020), at: <https://www.cleanenergywire.org/factsheets/germanys-greenhouse-gas-emissions-and-climate-targets>

³⁰ German Federal Ministry for the Environment, Nature Conservation, and Nuclear Safety, "Climate Action Plan 2050", at: <https://www.bmu.de/en/topics/climate-energy/climate/national-climate-policy/greenhouse-gas-neutral-germany-2050/>



Appendix 1

Berlin Hyp Carbon Footprint Assessment Methodology

The following pages show the results and methodology of the assessment of the carbon emissions related to Berlin Hyp's loan portfolio. The scope of CO₂ emissions thereby is the sum of the emissions from the individual energy demand for heating and electricity of each building financed.

The bank has analysed its loan portfolio's carbon footprint by year-end 2020. The portfolio comprised loans for 5,331 buildings in Europe. During the analysis all loans for multifamily dwellings, management buildings, offices, retail and logistic buildings have been taken into account, which stand for 97.3 per cent of the financed area.

The analysis is based on recorded EPC data out of the bank's loan monitoring system on the one hand side (26.1 per cent of the financed area, respectively 35 per cent of the nominal) and proxies for cases where EPCs are not yet in the bank's possession on the other hand side. These proxies have been developed in co-operation with an external consultant and are based on (1) the type of building and (2) the year of construction/latest refurbishment. As defined in Berlin Hyp's sustainability agenda, the bank is committed to increase the share of recorded EPCs in its loan monitoring system. Therefore, whenever a new EPC of an existing building is available, the bank will update the proxy with the correct energy value. This will also lead to an adjustment of the total carbon footprint basis value (i.e. in the baseline year 2020) in hindsight to avoid improvements that are only based on enhanced transparency.

The carbon footprint calculation of Berlin Hyp's loan portfolio is based on its Green Bond impact reporting methodology ([here](#)). In order to convert heating energy demand into carbon emissions, specific conversion factors are applied based on the buildings' heating sources and locations. When information regarding heating sources was not available, a country specific CO₂ factor based on the national mix for final energy consumption of the real estate sector was used. Factors applied for converting electricity energy demand into avoided carbon emissions are based on country-specific energy electricity production mixes. The results and methodology is specified below:

Results per 31 December 2020

Results	
Financed m2	32.046.441
Total Carbon (kgCO ₂ /a)	1.237.490.355
Carbon per m2 (kgCO ₂ /m ² /a)	38,62
Total energy demand (kWh)	4.707.625.550
Energy demand per m2 (kWh/m ²)	146

Methodological Principles

The assessment of the carbon footprint of Berlin Hyp's loan portfolio is the sum of the portfolio's carbon footprint from energy demand for heating (including all technology sources i.e. coal, electricity, fuel, gas, district heating and renewable) and the portfolio's energy demand for electricity. The assessment is based on line-by-line calculations for each building financed by Berlin Hyp.

1. Assessment of carbon footprint from energy demand for heating, using

- ED_{Heating}: The final energy demand for heating for each building in the portfolio in kWh/m² per year



- CF: The relevant carbon conversion factor for the building estimated from an external source in gCO₂e/kWh:
 - i. CF_F: The carbon conversion factor for fossil fuel when the energy source is fossil fuel (i.e. coal, fuel oil or gas)
 - ii. CF_H: The country or location-specific carbon conversion factor for district heating when the building is connected to a district heating network
 - iii. C_{IE}: The country-specific carbon intensity of the electric grid when the building is using electrified heating sources
 - iv. CFA: The country-specific average conversion factor when the heating sources is unknown
 - v. When the energy source is a type of renewable energy (including biomass), the carbon conversion factor is estimated to be zero

$$\text{Carbon Footprint}_{\text{Heating}}(\text{Building}) = \text{ED}_{\text{Heating}}(\text{Building}) \times CF \times \text{Area}(\text{Building})$$

2. Assessment of carbon footprint from energy demand for electricity, using

- ED_{Electricity}: The final energy demand for electricity usage other than heating for each building in the portfolio in kWh/m² per year
- C_{IE}: The country-specific carbon intensity of the electric grid in gCO₂e/kWh

$$\text{Carbon Footprint}_{\text{Electricity}}(\text{Building}) = \text{ED}_{\text{Electricity}}(\text{Building}) \times C_{IE} \times \text{Area}(\text{Building})$$

The portfolio's carbon footprint is given by the sum of both carbon footprints for all buildings in Berlin Hyp's portfolio:

$$\begin{aligned} \text{Carbon Footprint}(\text{Building}) \\ = \text{Carbon Footprint}_{\text{Heating}}(\text{Building}) + \text{Carbon Footprint}_{\text{Electricity}}(\text{Building}) \end{aligned}$$

Carbon conversion factors

Carbon conversion factors designed to calculate the carbon footprint of the energy demand for heating or electricity are documented in its Annual Sustainable Linked-Bond Report available on its website. Berlin Hyp commits to estimate these factors using up-to-date publicly available data and to review carbon conversion factors annually.

Carbon conversion factor for Fossil Fuel (CF_F)

The carbon conversion factors used for coal, fuel oil or gas are the IPCC emission factors.

Energy type	Carbon conversion factor (gCO ₂ e/kWh)
Coal	355
Fuel oil	306
Gas	240

Carbon conversion factor for District Heating (CF_H)

Carbon emissions factors for district heating systems were calculated in a similar way to the Annual Reporting of Berlin Hyp Green Bond portfolio.



Country	Carbon conversion factor (gCO ₂ e/kWh)
Belgium	74
Czech Republic	313
France	39
Germany	172
Luxembourg ³¹	74
Netherlands	195
Poland	364
United Kingdom	112

Carbon intensity of the Electricity (CI_E)

The carbon intensities for electricity are taken directly from the last update of the supplier mix CO₂ values in the AIB European Residual Mixes report.³² To account for the volatility of the energy mix, the final carbon intensity value is a three-year average.

Country	Carbon intensity (gCO ₂ e/kWh)
Belgium	145
Czech Republic	592
France	45
Germany	345
Luxembourg	217
Netherlands	306
Poland	841
Spain	308
United Kingdom	280

Carbon conversion factor for average energy use (CF_A)

For unknown heating sources, the carbon conversion factor considered reflects the mix of the final energy consumption:

- For commercial and/or residential buildings,
- In a given country,
- Annually.

³¹ As we could not calculate a specific value for Luxembourg, we considered it to have the same district heating carbon conversion factor than Belgium

³² [AIB European Residual Mix 2019](#)



To estimate the conversion factors, Berlin Hyp is committed to use the latest available national statistics, when available, or the data collected for each country on the European level. The list of database is detailed below.

When the data was older than five years, Berlin Hyp used extrapolation to estimate more accurate values for the energy mixes.³³

The carbon conversion factor is calculated as the weighted product of technology-specific conversion factor by this technology part in the energy mix:

$$FACountry = \%Coal \times FFCoal + \%Fuel\ Oil \times FFFuel\ Oil + \%Gas \times FFGas + \%District\ Heating \times FHCountry + \%Electricity \times FECountry$$

Country	Carbon Intensity (gCO ₂ e/kWh)		Sources	Extrapolated Data
	Residential I	Commercial		
Belgium	222	205	Belgian statistical office (StatBel) ³⁴	No
Czech Republic	264	411	EU Building Database ³⁵ from the European Commission	Yes
France	120	135	<i>Bilan énergétique de la France</i> ³⁶ from the French Ministry of the Environment	No
Germany	235	279	<i>Zahlen und Fakten Energiedaten</i> ³⁷ from the German Federal Ministry for Economic Affairs and Energy	No
Luxembourg	242	239	Statistics Portal of the Grand Duchy of Luxembourg ³⁸	No
Netherlands	240	264	The Netherlands' Central Agency for Statistics (CBS) ³⁹	No
Poland	364	467	Poland Central Statistical Office, Statistics Poland ⁴⁰	No
Spain	233	290	EU Building Database	Yes
United Kingdom	239	246	The United Kingdom Government's Digest of UK Energy Statistics (DUKES) ⁴¹	No

³³ The estimation of the trends of the electrification of buildings in the relevant European countries is based on the [EU energy statistical pocketbook and country datasheets](#). The calculated trends have been applied to outdated energy mixes to estimate the new share of electricity in the building sector of the relevant countries.

³⁴ [StatBel](#)

³⁵ [EU Building Database](#)

³⁶ [Bilan énergétique de la France 2018](#)

³⁷ [Zahlen und Fakten Energiedaten 2020](#)

³⁸ [Portail des Statistiques](#)

³⁹ [CBS](#)

⁴⁰ [Statistics Poland 2019](#)

⁴¹ [DUKES 2020](#)



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The
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