

Landesbank Baden-Wuerttemberg - Mortgage Covered Bonds

Covered Bonds / Germany

Contacts

Monitoring

Stanislav Nastassine - +49 (697) 073-0714 - Stanislav.Nastassine@moodys.com

Riya Mathew - +91 (806) 885-8890 - Riya.Mathew@moodys.com

Monitor.CB@moodys.com

London: +44 20 7772-5454, csdlondon@moodys.com



Click on the icon to download data into Excel & to see Glossary of terms used Click here to access the covered bond programme webpage on moodys.com

Reporting as of:

Client Service Desk

31/12/2024

All amounts in EUR (unless otherwise specified)

For information on how to read this report, see the latest Moody's Covered Bonds Sector Update

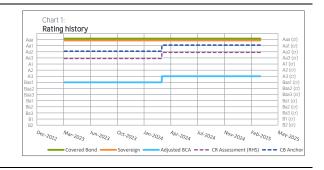
Data as provided to Moody's Investors Service (note 1)

I. Programme Overview

| Overview | | |
|---------------------------------------|-------------------------------|-----------|
| Total outstanding liabilities: | EUR 13,730, | 626,406 |
| Total assets in the Cover Pool: | EUR 20,237 | ,184,220 |
| Issuer name / CR Assessment: | Landesbank Baden-Wuerttemberg | / Aa2(cr) |
| Group or parent name / CR Assessment: | | n/a |



| Ratings | |
|---|-------------------------------|
| Covered bonds rating: | Aaa |
| Entity used in Moody's EL & TPI analysis: | Landesbank Baden-Wuerttemberg |
| CB anchor: | Aa1 |
| CR Assessment: | Aa2(cr) |
| Adjusted BCA / SUR: | a3 / Aa2 |
| Unsecured claim used for Moody's EL analysis: | Voc |



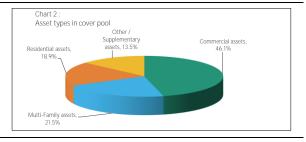
II. Value of the Cover Pool

Collateral quality

| Collateral Score: | 10.4% |
|---------------------------------------|-------|
| Collateral Score excl. systemic risk: | n/a |

Cover Pool Joseph

| COVEL FOOT TOSSES | | |
|--|-------|------|
| Collateral Risk (Collateral Score post-haircut): | 7.0% | 39% |
| Market Risk: | 11.0% | 61% |
| | 18.0% | 100% |



III. Over-Collateralisation Levels

Over-Collateralisation (OC) figures presented below include Eligible only collateral

Over-Collateralisation levels are provided on any of the following: nominal basis or unstressed NPV basis or on stressed NPV basis. NPV stress assumptions applied as required by the legal framework for German Pfandbriefe.

(notes 2 & 3)

| Committed OC (Stressed NPV): | 2.0% |
|--|-------|
| Current OC (Unstressed NPV): | 44.2% |
| OC consistent with current rating (note 4) | 0.0% |



Scenario 1: CB anchor is lowered by

| | OC consistent with current rating | |
|-------|-----------------------------------|--|
| | | |
| notch | 0.0% | |

IV. Timely Payment Indicator & TPI Leeway

| Timely Payment Indicator (TPI): | High |
|---------------------------------|------|
| TPI Leeway: | 6 |

Extract from TPI table

| CB Anchor | High |
|-----------|------|
| Aaa | Aaa |
| Aa1 | Aaa |
| Aa2 | Aaa |
| Aa3 | Aaa |
| A1 | Aaa |
| A2 | Aaa |
| A3 | Aaa |
| Baa1 | Aaa |
| Baa2 | Aa1 |
| | |

Legal framework

| Does a specific covered bond law apply for this programme: | Yes, Pfandbrief Act |
|--|--------------------------------|
| Main country in which collateral is based / issuer is based: | Germany / Germany |
| Programme setup / structure: | Bank issuer holding cover pool |

1 notch

Timely principal payments

| Maturity type: | SOLL BUILEL |
|--|---|
| Committed liquidity reserve for principal amount of all hard bulle | et bonds to be |
| funded at least 180 days before maturity: | n/a |
| Committed liquidity reserve for principal amount of all soft bulle | t bonds to be |
| funded at least 180 days before initial maturity: | Yes |
| Maximum length of maturity extension: | > 6 months but ≤ 12 months |
| Trigger for maturity extension : | |
| (x) Issuer insolvency-type event(s) | (√) Cover pool insolvency-type event(s) |
| (x) Issuer resolution / early intervention measure(s) | (x) Other(s) |
| (x) Breach of liquidity requirements (actual/potential) | |
| Final decision on trigger: | Administrator |
| Final decision on trigger: | Administrat |

(note 1) The data reported in this PO is based on information provided by the issuer and may include certain assumptions made by Moody's. Moody's accepts no responsibility for the information provided to it and, whilst it believes the assumptions it has made are reasonable, cannot

(note 1) The data reported in this PU is Dased on information provided by the issuer and may include certain assumptions made by Moody's Accepts no responsibility for the information provided to It and, whilst it believes the assumptions it has made are reasonable, cannot guarantee that they are or will remain accurate. Although Moody's seneourages all lisusers to provide reporting data in a consistent manner, there may be differences in the way that certain data is categorised by issuers. The data reporting template (which issuers are requested to use) is available on request. Credit ratings, TPI and TPI Leeway shown in this PO are as of publication date.

(note 2) This assumes the Covered Bonds rating is not constrained by the TPI. Also to the extent rating assumptions change following a downgrade or an upgrade of the Issuer, the necessary OC stated here may also change. This is especially significant in the case of CR assessments of A3(cr) or Baa1(cr), as the necessary OC following a 1 notch downgrade may then be substantially higher than the amount suggested here as market risks are considered more critically by Moody's at this time. In any event, the necessary OC amounts stated here are subject to change at anytime at Moody's discretion.

(note 3) This is the minimum OC calculated to be consistent with the current rating under Moody's expected loss model. However, the level of OC consistent with a given rating level may differ from this amount where ratings are capped under the TPI framework and, for example, where competitive discretion is applied.

In the Covered Bonds at Tailing and Covered Bonds

Page
Covered Bonds

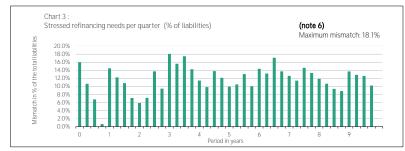
COVERED BONDS

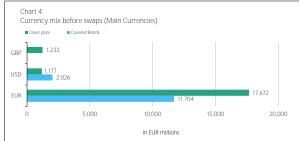
V. Asset Liability Profile

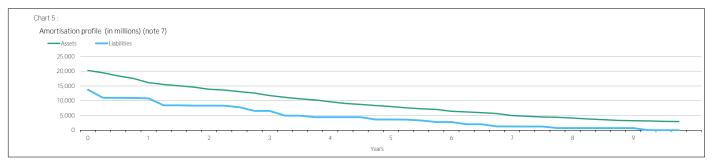
Interest Rate & Duration Mismatch (note 5)

| Fixed rate assets in the cover pool: | 71.4% |
|---------------------------------------|-----------------------|
| Fixed rate covered bonds outstanding: | 86.2% |
| WAL of outstanding covered bonds: | 3.2 years |
| floating / fixed rate | 5.4 y / 2.9 y |
| WAL of the cover pool: | 7.1 years |
| floating / fixed rate / time to reset | 2.4 v / 9.0 v / 6.4 v |

| Swap Arrangements | |
|--|----|
| Interest rate swap(s) in the Cover Pool: | No |
| Intra-group interest rate swap(s) provider(s): | No |
| Currency swap(s) in the Cover Pool: | No |
| Intro group ourropousuap(s) provider(s). | Ne |



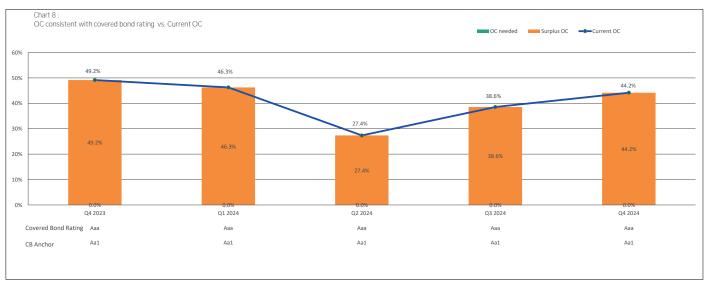




VI. Performance Evolution







This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the issuer/deal page on https://ratings.moodys.com/ for the most updated credit rating action information and rating history.

(note 5) This assumes no prepayment.
(note 6) Based on principal flows only. Assumptions include no prepayments, principal collections limited to the portion of assets that make up the amount of the liabilities plus committed OC, no further CB issuance and no further assets added to the cover pool.
(note 7) Assumptions include no swap in place in Cover Pool, no prepayment and no further CB issuance.

Landesbank Baden-Wuerttemberg - Mortgage Covered Bonds

COVERED BONDS

VII. Cover Pool Information - Residential Assets

Overview

| Asset type: | Residential |
|--------------------------------|---------------|
| Asset balance: | 3,830,307,523 |
| Average loan balance: | 135,845 |
| Number of loans: | 28,196 |
| Number of borrowers: | 23,250 |
| Number of properties: | 25,199 |
| WA remaining term (in months): | 239 |
| WA seasoning (in months): | 81 |

Details on LTV

| WA unindexed LTV (*) | 67.1% |
|-------------------------|---------------|
| WA Indexed LTV: | n/d |
| Valuation type: | Lending Value |
| LTV threshold: | 60.0% |
| Junior ranks: | n/d |
| Loans with Prior Ranks: | n/d |

Specific Loan and Borrower characteristics

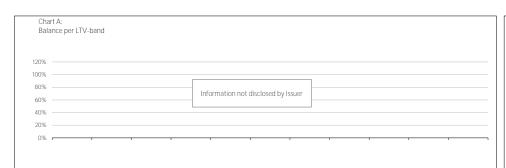
| Loans with an external guarantee in addition to a mortgage: | n/a |
|---|-------|
| Interest only Loans | 13.1% |
| Loans for second homes / Vacation: | 0.0% |
| Buy to let loans / Non owner occupied properties: | 23.2% |
| Limited income verified: | 0.0% |
| Adverse credit characteristics (**) | 0.0% |

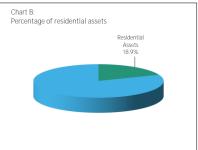
Performance

| Loans in arrears (≥ 2months - < 6months): | 0.0% |
|---|------|
| Loans in arrears (≥ 6months - < 12months): | 0.0% |
| Loans in arrears (≥ 12months): | 0.0% |
| Loans in a foreclosure procedure: | 0.0% |

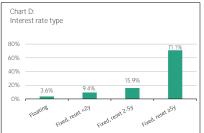
Multi-Family Properties

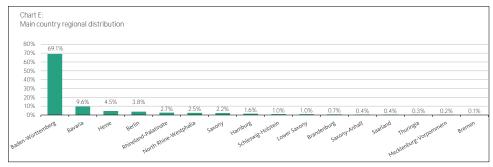
| Marti Tarini J Troportios | |
|--|-----|
| Loans to tenants of tenant-owned Housing Cooperatives: | n/a |
| Other type of Multi-Family loans (***) | n/a |

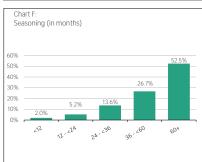


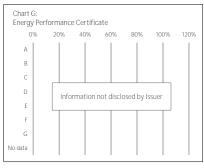












MOODY'S INVESTORS SERVICE COVERED BONDS

VIII. Cover Pool Information - Commercial Assets

| /erv | |
|------|--|
| | |
| | |

| Asset type: | Commercial |
|-----------------------|--|
| Asset balance: | 13,680,357,152 |
| Average loan balance: | 3,979,391 |
| Number of loans: | 3,437 |
| Number of borrowers: | 1,996 |
| Largest 10 borrowers: | 16.2% |
| Number of properties: | 5,214 |
| Main countries: | Germany (78.4%), UK (9.0%), USA (8.6%) |

Specific Loan and Borrower characteristics

| Bullet loans: | 48.8% |
|------------------------------------|-------------------------------------|
| Main currencies: | EUR (81.3%), GBP (9.0%), USD (8.6%) |
| Fixed rate loans: | 77.1% |
| Non-recourse to sponsor/initiator: | 97.3% |

Details on Loan Underwriting

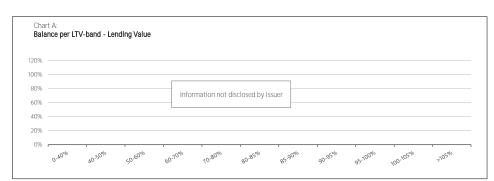
| WA DSCR: | n/d |
|--------------------------------|-----|
| WA loan seasoning (in months): | 68 |
| WA remaining term (in months): | 71 |

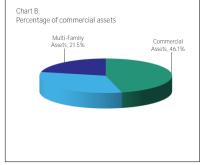
Details on LTV

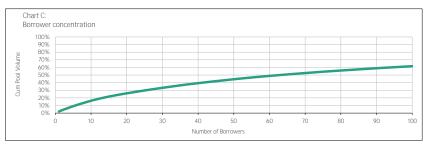
| WA LTV(*): | 74.9% |
|---------------------|---------------|
| WA Current LTV(**): | n/d |
| Valuation type: | Lending Value |
| LTV Threshold: | 60.0% |

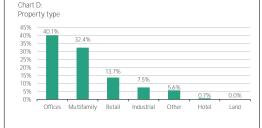
Performance

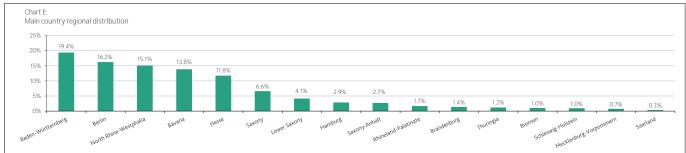
| Loans in arrears ≥ 2 months: | 0.0% |
|-----------------------------------|------|
| Loans in a foreclosure procedure: | 0.0% |

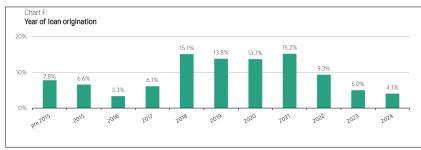


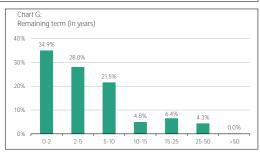


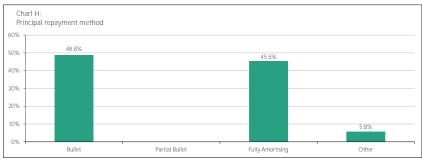


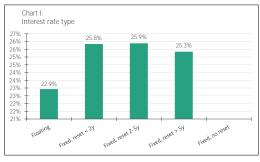












(note *) Based on whole loan and property value at origination. (note **) Based on whole loan and updated property value.

MOODY'S INVESTORS SERVICE COVERED BONDS

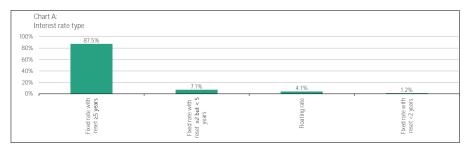
IX. Cover Pool Information - Supplementary Assets

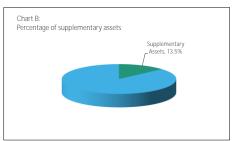
Overview

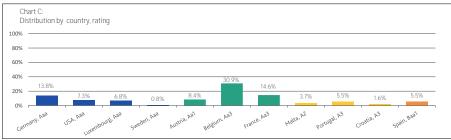
| Asset type: | Supplementary Assets |
|--------------------------------|----------------------|
| Asset balance: | 2,726,519,545 |
| WA remaining Term (in months): | 124 |
| Number of assets: | 37 |
| Number of borrowers: | 22 |
| Average assets size: | 73,689,717 |
| Average exposure to borrowers: | 123,932,707 |

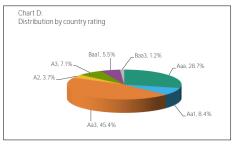
Specific Loan and Borrower characteristics

| Repo eligible assets: | 92.7% |
|--|--------|
| Percentage of fixed rate assets: | 95.9% |
| Percentage of bullet assets: | 100.0% |
| Assets in non-domestic currency: | 0.0% |
| Performance | |
| Assets in arrears (≥ 2months - < 6months): | 0.0% |
| Assets in arrears (≥ 6months - < 12months): | 0.0% |
| Assets in arrears (> 12months): | 0.0% |
| Assets in a enforcement procedure: | 0.0% |









MOODY'S INVESTORS SERVICE COVERED BONDS

X. Liabilities Information: Last 50 Issuances as reported by the Issuer

| | Series | ESG bond type, If | Outstanding | Issuance | Expected | Extended | Interest Rate | | Principal |
|----------------|--------|-------------------|-------------------|------------|------------|------------|---------------|-----------------------------|--------------|
| ISIN | Number | applicable | Amount | Date | Maturity | Maturity | Туре | Coupon | Payment |
| DE000LB4W6L3 | n/d | | EUR 78,641 | 13/12/2024 | 04/01/2027 | 04/01/2028 | Fixed rate | 2.308% | Soft Bullet |
| DE000LB4W407 | n/d | | USD 25,000,000 | 16/09/2024 | 16/09/2026 | 16/09/2027 | Floating rate | SOFR USD-Overnight + 35 bps | Soft Bullet |
| DE000LB4W431 | n/d | | EUR 297,556 | 13/09/2024 | 03/01/2028 | 03/01/2029 | Fixed rate | 2.620% | Soft Bullet |
| DE000LB4W4R5 | n/d | | EUR 6,000,000 | 30/08/2024 | 30/08/2029 | 30/08/2030 | Fixed rate | 3.490% | Soft Bullet |
| DE000LB4W3M8 | n/d | | EUR 138,956 | 16/07/2024 | 02/01/2034 | 02/01/2035 | Fixed rate | 3.169% | Soft Bullet |
| DE000LB4W3N6 | n/d | | EUR 191,014 | 16/07/2024 | 02/01/2035 | 02/01/2036 | Fixed rate | 3.177% | Soft Bullet |
| DE000LB4W3P1 | n/d | | EUR 81,605 | 16/07/2024 | 04/01/2038 | 04/01/2039 | Fixed rate | 3.202% | Soft Bullet |
| DE000LB39ER4 | n/d | | EUR 24,799 | 13/06/2024 | 02/01/2035 | 02/01/2036 | Fixed rate | 3.130% | Soft Bullet |
| DE000LB39ED4 | n/d | | USD 600,000,000 | 31/05/2024 | 04/02/2028 | 04/02/2029 | Fixed rate | 4.875% | Soft Bullet |
| DE000LB39EF9 | n/d | | EUR 35,000,000 | 31/05/2024 | 31/05/2028 | 31/05/2029 | Fixed rate | 3.140% | Soft Bullet |
| DE000LB39DP0 | n/d | | EUR 500,000,000 | 26/04/2024 | 26/04/2027 | 26/04/2028 | Fixed rate | 3.000% | Soft Bullet |
| DE000LB39DQ8 | n/d | | EUR 750,000,000 | 26/04/2024 | 26/09/2031 | 26/09/2032 | Fixed rate | 3.000% | Soft Bullet |
| DE000LB39DD6 | n/d | | EUR 901,628 | 12/04/2024 | 04/01/2027 | 04/01/2028 | Fixed rate | 3.152% | Soft Bullet |
| DE000LB39DE4 | n/d | | EUR 544,367 | 12/04/2024 | 02/01/2029 | 02/01/2030 | Fixed rate | 2.982% | Soft Bullet |
| DE000LB39DF1 | n/d | | EUR 654,393 | 12/04/2024 | 02/01/2031 | 02/01/2032 | Fixed rate | 2.954% | Soft Bullet |
| DE000LB39CE6 | n/d | | EUR 500,000,000 | 06/03/2024 | 06/09/2028 | 06/09/2029 | Floating rate | 3-Monats-EURIBOR + 30 bps | Soft Bullet |
| DE000LB39CF3 | n/d | | EUR 500,000,000 | 06/03/2024 | 06/09/2030 | 06/09/2031 | Floating rate | 3-Monats-EURIBOR + 38 bps | Soft Bullet |
| DE000LB39CG1 | n/d | | EUR 500,000,000 | 06/03/2024 | 06/09/2032 | 06/09/2033 | Floating rate | 3-Monats-EURIBOR + 41 bps | Soft Bullet |
| DE000LB39B99 | n/d | | EUR 5,000,000 | 28/02/2024 | 28/02/2025 | 28/02/2026 | Fixed rate | 3.420% | Soft Bullet |
| DE000LB39BP4 | n/d | | EUR 700,000,000 | 16/02/2024 | 16/02/2034 | 16/02/2035 | Fixed rate | 3.000% | Soft Bullet |
| DE000LB39BK5 | n/d | | EUR 865,125 | 09/02/2024 | 03/01/2028 | 03/01/2029 | Fixed rate | 2.732% | Soft Bullet |
| DE000LB39BD0 | n/d | | USD 600,000,000 | 02/02/2024 | 02/02/2026 | 02/02/2027 | Fixed rate | 4.761% | Soft Bullet |
| DE000LB39AS0 | n/d | | EUR 750.000.000 | 12/01/2024 | 12/03/2031 | 12/03/2032 | Fixed rate | 2.750% | Soft Bullet |
| DE000LB39AU6 | n/d | | EUR 687,642 | 09/01/2024 | 02/01/2030 | 02/01/2031 | Fixed rate | 2.688% | Soft Bullet |
| DE000LB38887 | n/d | | USD 80.000.000 | 23/10/2023 | 23/10/2025 | 23/10/2026 | Floating rate | SOFR USD-Overnight + 52 bps | Soft Bullet |
| DE000LB388R8 | n/d | Green bond | USD 50,000,000 | 22/09/2023 | 22/09/2025 | 22/09/2026 | Fixed rate | 5.431% | Soft Bullet |
| DE000LB387J7 | n/d | | EUR 715,259 | 07/07/2023 | 04/01/2027 | 04/01/2028 | Fixed rate | 3.559% | Soft Bullet |
| DE000LB387B4 | n/d | Green bond | EUR 500,000,000 | 27/06/2023 | 27/09/2027 | 27/09/2028 | Fixed rate | 3.250% | Soft Bullet |
| DE000LB38655 | n/d | | EUR 764.502 | 06/06/2023 | 02/01/2026 | 02/01/2027 | Fixed rate | 3.308% | Soft Bullet |
| DE000LB38663 | n/d | | EUR 678.532 | 06/06/2023 | 02/01/2032 | 02/01/2033 | Fixed rate | 3.036% | Soft Bullet |
| DE000LB38689 | n/d | | EUR 22,569 | 06/06/2023 | 02/01/2046 | 02/01/2047 | Fixed rate | 2.889% | Soft Bullet |
| DE000LB385X2 | n/d | | EUR 874,980 | 11/04/2023 | 03/01/2028 | 03/01/2029 | Fixed rate | 3.026% | Soft Bullet |
| DE000LB385Y0 | n/d | | EUR 700,213 | 11/04/2023 | 02/01/2031 | 02/01/2032 | Fixed rate | 3.015% | Soft Bullet |
| DE000LB385Z7 | n/d | | EUR 718.361 | 11/04/2023 | 02/01/2035 | 02/01/2036 | Fixed rate | 3.088% | Soft Bullet |
| DE000LB384E5 | n/d | | EUR 1.000.000.000 | 23/01/2023 | 23/03/2026 | 23/03/2027 | Fixed rate | 2.875% | Soft Bullet |
| DE000LB383H0 | n/d | | EUR 741,961 | 06/12/2022 | 02/01/2034 | 02/01/2035 | Fixed rate | 2.633% | Soft Bullet |
| DE000LB383J6 | n/d | | FUR 697.271 | 06/12/2022 | 02/01/2029 | 02/01/2030 | Fixed rate | 2.520% | Soft Bullet |
| DE000LB382K6 | n/d | | EUR 649.112 | 08/11/2022 | 03/01/2033 | 03/01/2034 | Fixed rate | 3.215% | Soft Bullet |
| DE000LB382L4 | n/d | | EUR 937.117 | 08/11/2022 | 04/01/2027 | 04/01/2028 | Fixed rate | 3.029% | Soft Bullet |
| DE000LB2ZX91 | n/d | | EUR 821,744 | 05/09/2022 | 02/01/2030 | 02/01/2031 | Fixed rate | 2.094% | Soft Bullet |
| DE000LB2ZV93 | n/d | Green bond | EUR 1,000,000,000 | 28/07/2022 | 28/02/2028 | 28/02/2029 | Fixed rate | 1.750% | Soft Bullet |
| DE000LB2ZUY4 | n/d | Groon bond | EUR 815.070 | 06/05/2022 | 02/01/2031 | 02/01/2032 | Fixed rate | 1.741% | Soft Bullet |
| DE000LB2ZT55 | n/d | | EUR 948.209 | 06/04/2022 | 02/01/2026 | 02/01/2027 | Fixed rate | 0.884% | Soft Bullet |
| DE000LB2ZT63 | n/d | | EUR 847.049 | 06/04/2022 | 03/01/2028 | 03/01/2029 | Fixed rate | 1.001% | Soft Bullet |
| DE000LB2ZTR0 | n/d | | EUR 976.589 | 07/03/2022 | 04/01/2027 | 04/01/2028 | Fixed rate | 0.430% | Soft Bullet |
| DE000LB2ZTL3 | n/d | Green bond | USD 750.000.000 | 24/02/2022 | 24/02/2025 | 24/02/2026 | Fixed rate | 2.000% | Soft Bullet |
| DE000LB2ZS07 | n/d | Groon bond | EUR 10.000,000 | 02/02/2022 | 02/02/2032 | 02/02/2033 | Fixed rate | 0.630% | Soft Bullet |
| DE000LB2ZSM3 | n/d | | EUR 750.000,000 | 24/01/2022 | 24/07/2029 | 24/07/2030 | Fixed rate | 0.125% | Soft Bullet |
| DE000LB2WAF2 | n/d | | EUR 300.000,000 | 15/12/2021 | 18/04/2030 | 18/04/2031 | Floating rate | 3-Monats-EURIBOR + 80 bps | Soft Bullet |
| DE000LB2V6L6 | n/d | | EUR 942.612 | 07/06/2021 | 02/01/2030 | 02/01/2031 | Fixed rate | 0.029% | Soft Bullet |
| DEGGGEDE 1 GEG | 11, 0 | | LUN /72,U12 | 3110012021 | 32/01/2030 | 52/01/2031 | TINCUTUIC | 0.02770 | JOI L DUITCE |

COVERED BOIL

© 2025 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S CREDIT RATINGS AFFILIATES ARE THEIR CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED OR OTHERWISE MADE AVAILABLE BY MOODY'S (COLLECTIVELY, "MATERIALS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL DOBIGICATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFINAL FINANCIAL DOBIGICATIONS STHEOLY AND DEFINITIONS DO PRIDE INFORMATION ON THE TYPE'S OF CONTRACTUAL FINANCIAL DOBIGICATIONS AND DEFINIONS ON DEBILICATION FOR INFORMATION ON ON THE TYPE'S OF CONTRACTUAL FINANCIAL DOBIGICATIONS AND DEFINIONS ON DEBILICATION FOR INFORMATION ON THE TYPE SO F CONTRACTUAL FINANCIAL DOBIGICATIONS AND DEFINIONS ON DEBILICATION FOR INFORMATION ON THE TYPE SO F CONTRACTUAL FINANCIAL ADVISOR OF THE ATTINGS, NON-CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORY OF PONIONS AND MATERIALS AND ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS AND MATERIALS AND AND OTHER OPINIONS AND PONIONS AND PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS AND MATERIALS AND MATERIALS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT OF THE AND ADDRESS A

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND MATERIALS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR MATERIALS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER

ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT. FOR CLARITY, NO. INFORMATION CONTAINED HEREIN MAY BE USED TO DEVELOP, IMPROVE, TRAIN OR RETRAIN ANY SOFTWARE PROGRAM OR DATABASE, INCLUDING, BUT NOT LIMITED TO, FOR ANY ARTIFICIAL INTELLIGENCE, MACHINE LEARNING OR NATURAL LANGUAGE PROCESSING SOFTWARE, ALGORITHM, METHODOLOGY AND/OR MODEL

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the credit rating process or in preparing its Materials.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay Moody's Navestors Service, Inc. for credit ratings opinions and services rendered by it. MCO and all MCO entities that issue ratings under the "Moody's Ratings" brand name ("Moody's Ratings"), also maintain policies and procedures to address the independence of Moody's Ratings' credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service, Inc. and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at ir.moodys.com under the heading "Investor Relations — Corporate Governance — Charter and Governance — Charter and Governance Documents - Director and Shareholder Affiliation Policy."

Moody's SF Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agéncia de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Classificadora de Riesgo S.A., and Moody's Local PA Calificadora de Riesgo S.A. (collectively, the "Moody's Non-NRSRO CRAs") are all indirectly wholly-owned credit rating agency subsidiaries of MCO. None of the Moody's Non-NRSRO CRAs is a Nationally Recognized Statistical Rating Organization.

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document nor accessing the document or is concument as a representative of, a "wholesale clients" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for India only: Moody's credit ratings, Assessments, other opinions and Materials are not intended to be and shall not be relied upon or used by any users located in India in relation to securities listed or proposed to be listed on Indian stock exchanges

Additional terms with respect to Second Party Opinions and Net Zero Assessments (as defined in Moody's Ratings Rating Symbols and Definitions): Please note that neither a Second Party Opinion ("SPO") nor a Net Zero Assessment ("NZA") is a "credit rating". The issuance of SPOs and NZAs is not a regulated activity in many jurisdictions, including Singapore. JAPAN: In Japan, development and provision of SPOs and NZAs fall under the category of "Ancillary Businesses", not "Credit Rating Business", and are not subject to the regulations applicable to "Credit Rating Business" under the Financial Instruments and Exchange Act of Japan and its relevant regulation. PRC: Any SPO: (1) does not constitute a PRC Green Bond Assessment as defined under any relevant PRC laws or regulations; (2) cannot be included in any registration statement, offering circular, prospectus or any other documents submitted to the PRC regulatory authorities or otherwise used to otherwise used to statisfy any PRC regulatory disclosure requirement; and (3) cannot be used within the PRC for any regulatory purpose or for any other purpose which is not permitted under relevant PRC laws or regulations. For the purposes of this disclaimer, "PRC" refers to the mainland of the People's Republic of China, excluding Hong Kong, Macau and Taiwan.

