

Landesbank Hessen-Thüringen GZ - Public-Sector Covered Bonds

Covered Bonds / Germany

Contacts

Patrick Widmayer - +49 (697) 073-0715 - Patrick.Widmayer@moodys.com
 Elisabeth Zeidler - +44 (207) 772-5283 - elisabeth.zeidler@moodys.com



Monitoring

Client Service Desk

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:

30/06/2026

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)

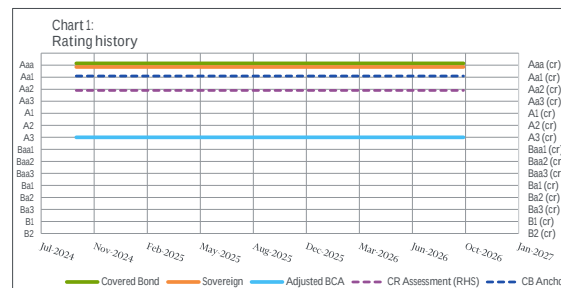
I. Programme Overview

Overview

Total outstanding liabilities:	EUR	19,297,530,950
Total assets in the Cover Pool:	EUR	30,041,707,033
Issuer name / CR Assessment:	Landesbank Hessen-Thüringen GZ / Aa2(cr)	
Group or parent name / CR Assessment:	n/a	

Ratings

Covered bonds rating:	Aaa	
Entity used in Moody's EL & TPI analysis:	Landesbank Hessen-Thüringen Girozentrale	
CB anchor:	Aa1	
CR Assessment:	Aa2(cr)	
Adjusted BCA / SUR:	a3 / Aa2	
Unsecured claim used for Moody's EL analysis:	Yes	



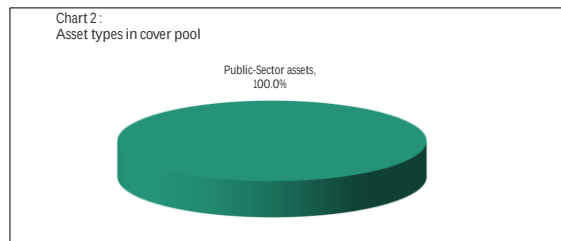
II. Value of the Cover Pool

Collateral quality

Collateral Score:	2.7%
Collateral Score excl. systemic risk:	n/a

Cover Pool losses

Collateral Risk (Collateral Score post-haircut):	1.3%	15%
Market Risk:	7.5%	85%
	8.8%	100%



III. Over-Collateralisation Levels

(notes 2 & 3)

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.

Current situation

Committed OC (Stressed NPV):	2.0%
Current OC (Unstressed NPV):	59.3%
OC consistent with current rating (note 4)	0.0%

Besides 2% committed OC on NPV basis, in accordance with German Pfandbrief Act, the issuer is also required to hold additional 2% OC calculated on nominal basis.

Sensitivity scenario CB anchor

OC consistent with current rating		
Scenario 1: CB anchor is lowered by	1 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

Timely principal payments

Maturity type:	Soft Bullet
Committed liquidity reserve for principal amount of all hard bullet bonds to be funded at least 180 days before maturity:	n/a
Committed liquidity reserve for principal amount of all soft bullet 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 ("Y" means applicable, "N" means not applicable):	(Y) Cover pool insolvency-type event(s)
(N) Issuer insolvency-type event(s)	(N) Other(s)
(N) Issuer resolution / early intervention measure(s)	(N) Other(s)
(N) Breach of liquidity requirements (actual/potential)	(N) Other(s)
Final decision on trigger:	Administrator

(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 guarantee that they are or will remain accurate. Although Moody's encourages all issuers 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 Aa3(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 any time 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 committee discretion is applied.

(note 4) The OC consistent with the current rating is the minimum level of over-collateralisation which is necessary to support the covered bond rating at its current level on the basis of the pool as per the cut-off date. The sensitivity run is based on certain assumptions, including that the Covered Bonds rating is not constrained by the TPI. Further, this sensitivity run is a model output only and therefore a simplification as it does not take into account certain assumptions that may change as an issuer is downgraded, and as a result the actual OC number consistent with the current rating may be higher than shown. The OC required may also differ from the model output in situations when committee discretion is applied. In any event, the OC amounts stated here are subject to change at any time at Moody's discretion.

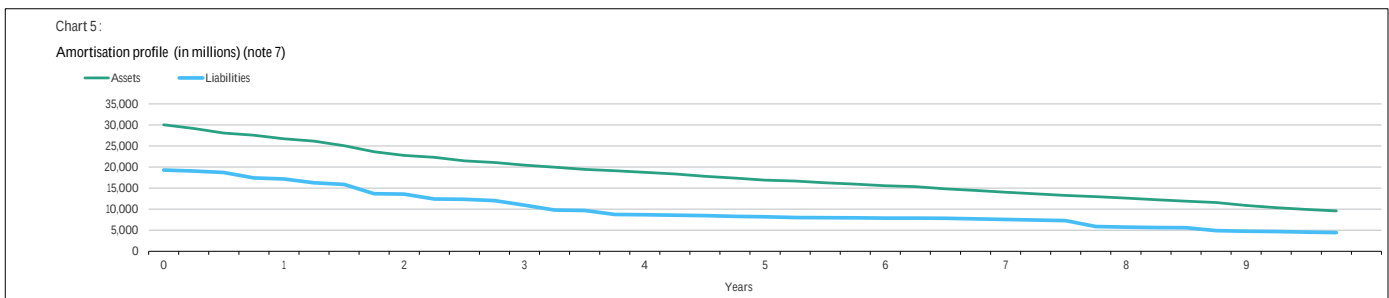
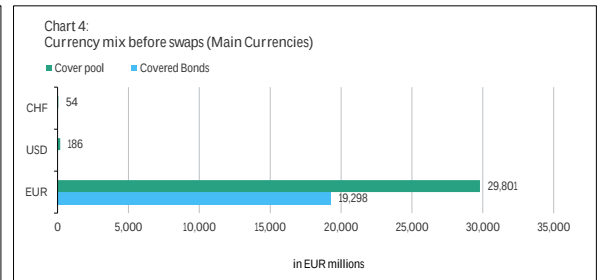
V. Asset Liability Profile

Interest Rate & Duration Mismatch (note 5)

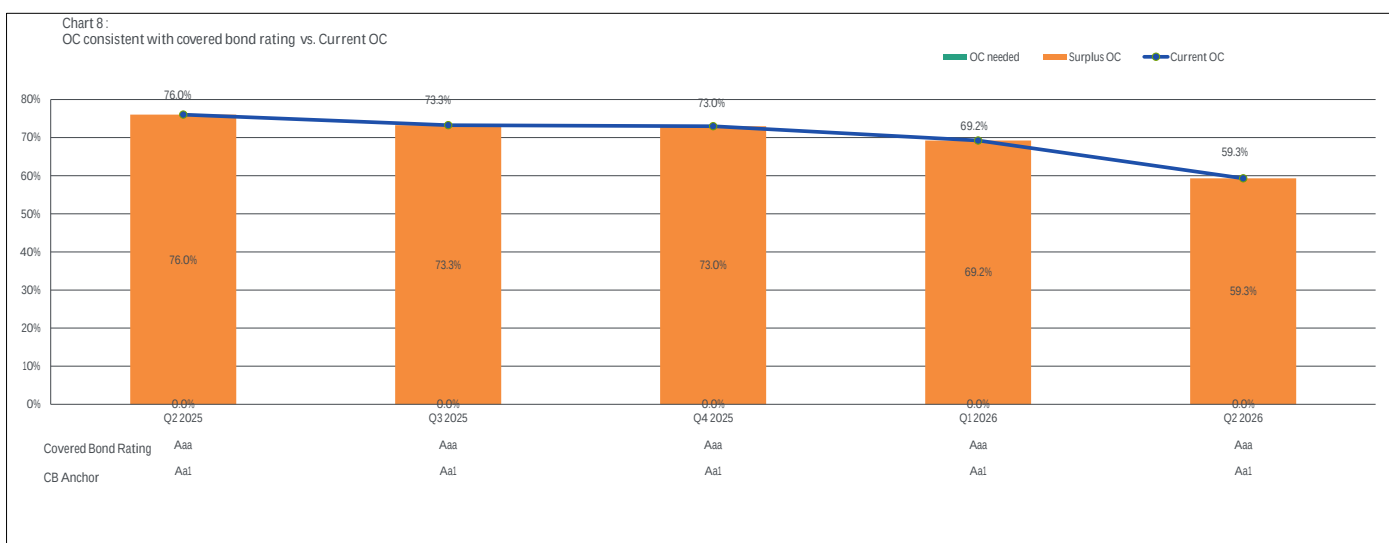
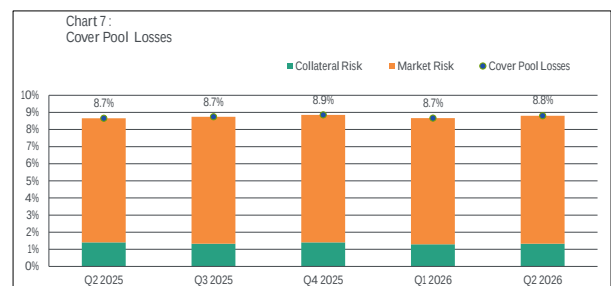
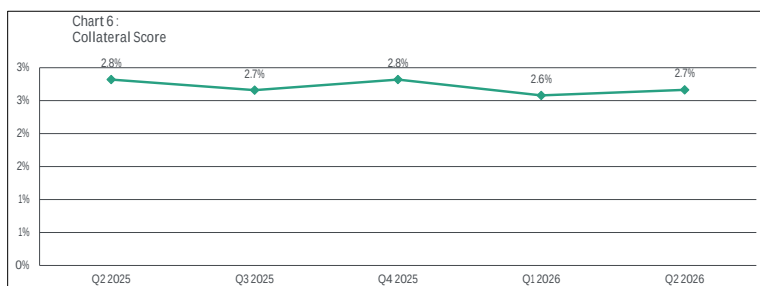
Fixed rate assets in the cover pool:	84.6%
Fixed rate covered bonds outstanding:	90.0%
WAL of outstanding covered bonds:	6.5 years
floating / fixed rate	5.3 y / 6.6 y
WAL of the cover pool:	8.0 years
floating / fixed rate / time to reset	5.2 y / 8.5 y / 7.9 y

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
Intra-group currency swap(s) provider(s):	No



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.moody's.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 swaps in place in Cover Pool, no prepayment and no further CB issuance.

VII. Cover Pool Information - Public Sector Assets

Overview

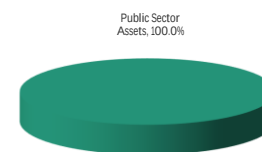
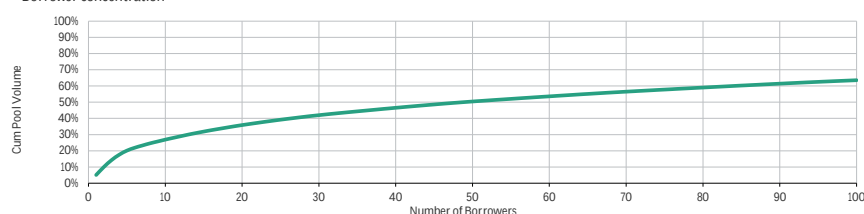
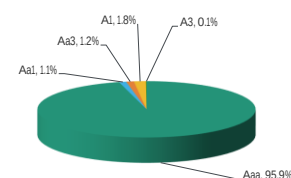
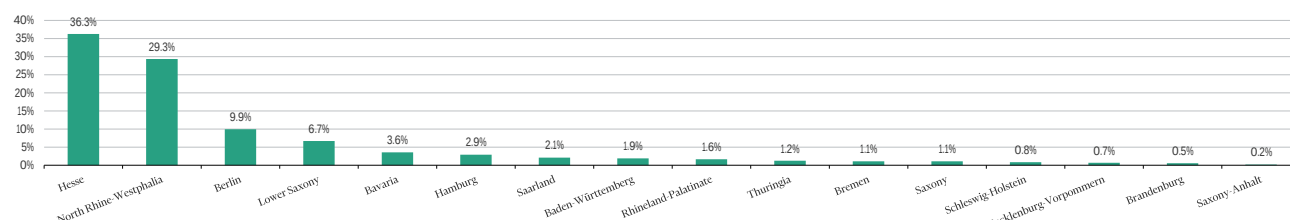
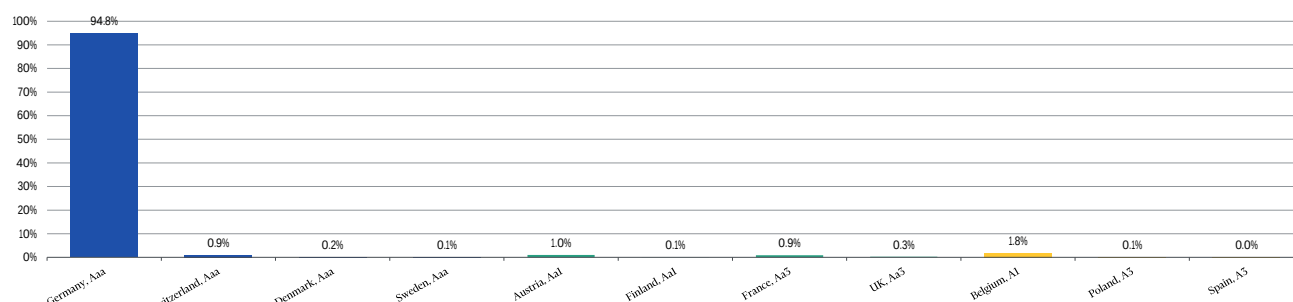
Asset type:	Public Sector
Asset balance:	30,041,707,033
WA remaining Term (in months):	144
Number of borrowers:	2,598
Number of loans / bonds:	11,775
Exposure to the 10 largest borrowers:	26.9%
Average exposure to borrowers:	11,563,398

Specific Loan and Borrower characteristics

Repo eligible loans / bonds:	15%
Percentage of fixed rate loans / bonds:	93.3%
Percentage of bullet loans / bonds:	29.1%
Loans / bonds in non-domestic currency:	0.8%
Performance	
Loans / bonds in arrears (< 2months - < 6months):	0.0%
Loans / bonds in arrears (> 6months - < 12months):	0.0%
Loans / bonds in arrears (> 12months):	0.0%
Loans / bonds in a foreclosure procedure:	0.0%

Table A : Borrower type by country

	Germany	Belgium	Turkiye	Other	Totals
Direct claim against supranational	0.0%	0.0%	0.0%	0.0%	0.0%
Direct claim against sovereign	0.0%	0.0%	0.0%	0.0%	0.0%
Loan with guarantee of sovereign	0.5%	0.0%	1.1%	3.5%	5.1%
Direct claim against region/federal state	27.3%	0.0%	0.0%	0.4%	27.7%
Loan with guarantee of region/federal state	3.4%	0.0%	0.0%	1.0%	4.4%
Direct claim against municipality	56.7%	0.0%	0.0%	0.3%	57.0%
Loan with guarantee of municipality	3.5%	1.7%	0.0%	0.0%	5.2%
Others	0.4%	0.0%	0.0%	0.2%	0.6%
	91.9%	1.7%	1.1%	5.4%	

Chart B:
Percentage of public sector assetsChart C:
Borrower concentrationChart D:
Pool distribution by country exposure ratingChart E:
Main country regional distributionChart F:
Distribution by country exposure, rating

VIII. Liabilities Information: Last 50 Issuances as reported by the issuer

ISIN	Series Number	ESG bond type, if applicable	Outstanding Amount	Issuance Date	Expected Maturity	Extended Maturity	Interest Rate Type	Coupon	Principal Payment
DE000HEL4BP0	n/d		EUR 975,000,000	11/06/2026	11/06/2029	11/06/2030	Floating rate	6-Monats-EURIBOR + 10 bps	Soft Bullet
XF0000HEKMT5	n/d		EUR 5,000,000	26/05/2026	26/05/2051	26/05/2052	Fixed rate	4.160%	Soft Bullet
XF0000HEKMF4	n/d		EUR 10,000,000	20/04/2026	20/04/2054	20/04/2055	Fixed rate	4.000%	Soft Bullet
XF0000HEKMA5	n/d		EUR 1,000,000	15/04/2026	16/04/2047	16/04/2048	Fixed rate	3.605%	Soft Bullet
XF0000HEKLI91	n/d		EUR 10,000,000	14/04/2026	14/04/2051	14/04/2052	Fixed rate	3.920%	Soft Bullet
XF0000HEKLQ3	n/d		EUR 63,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLR1	n/d		EUR 2,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLS9	n/d		EUR 4,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKL77	n/d		EUR 50,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLU5	n/d		EUR 8,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLV3	n/d		EUR 5,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLW1	n/d		EUR 2,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLX9	n/d		EUR 15,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLY7	n/d		EUR 20,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLZ4	n/d		EUR 30,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKL00	n/d		EUR 1,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKL18	n/d		EUR 1,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKL26	n/d		EUR 2,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKL34	n/d		EUR 2,000,000	02/04/2026	02/04/2046	02/04/2047	Fixed rate	3.975%	Soft Bullet
XF0000HEKLL4	n/d		EUR 10,000,000	30/03/2026	30/03/2051	30/03/2052	Fixed rate	4.100%	Soft Bullet
XF0000HEKLM2	n/d		EUR 1,000,000	30/03/2026	30/03/2051	30/03/2052	Fixed rate	4.100%	Soft Bullet
XS3285525666	n/d		EUR 5,000,000	03/02/2026	03/02/2051	03/02/2052	Fixed rate	3.800%	Soft Bullet
XF0000HEKKA9	n/d		EUR 10,000,000	23/01/2026	23/01/2051	23/01/2052	Fixed rate	3.780%	Soft Bullet
XS3276331553	n/d		EUR 500,000,000	20/01/2026	22/01/2035	22/01/2036	Fixed rate	3.000%	Soft Bullet
XF0000HEKJ61	n/d		EUR 2,000,000	09/01/2026	09/01/2031	09/01/2032	Fixed rate	2.690%	Soft Bullet
XF0000HEKJ79	n/d		EUR 3,000,000	09/01/2026	09/01/2031	09/01/2032	Fixed rate	2.690%	Soft Bullet
XF0000HEKJ04	n/d		EUR 1,000,000	06/01/2026	08/01/2046	08/01/2047	Fixed rate	3.660%	Soft Bullet
XF0000HEKH71	n/d		EUR 5,000,000	12/12/2025	12/12/2050	12/12/2051	Fixed rate	3.560%	Soft Bullet
XF0000HEKH89	n/d		EUR 5,000,000	11/12/2025	11/12/2051	11/12/2052	Fixed rate	3.560%	Soft Bullet
XF0000HEKH06	n/d		EUR 10,000,000	28/11/2025	29/11/2055	29/11/2056	Fixed rate	4.010%	Soft Bullet
XF0000HEKHP3	n/d		EUR 10,000,000	12/11/2025	12/11/2046	12/11/2047	Fixed rate	3.440%	Soft Bullet
XF0000HEKHQ1	n/d		EUR 10,000,000	12/11/2025	12/11/2047	12/11/2048	Fixed rate	3.450%	Soft Bullet
XF0000HEKHR9	n/d		EUR 10,000,000	12/11/2025	12/11/2048	12/11/2049	Fixed rate	3.460%	Soft Bullet
XF0000HEKHC1	n/d		EUR 10,000,000	07/11/2025	07/11/2045	07/11/2046	Fixed rate	3.620%	Soft Bullet
XF0000HEKHD9	n/d		EUR 1,000,000	07/11/2025	07/11/2045	07/11/2046	Fixed rate	3.620%	Soft Bullet
XF0000HEKHB3	n/d		EUR 5,000,000	05/11/2025	05/11/2055	05/11/2056	Fixed rate	3.780%	Soft Bullet
XF0000HEKGG4	n/d		EUR 7,000,000	09/10/2025	09/04/2040	09/04/2041	Fixed rate	3.320%	Soft Bullet
XF0000HEKGS9	n/d		EUR 25,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	4.015%	Soft Bullet
XF0000HEKGT7	n/d		EUR 10,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	4.015%	Soft Bullet
XF0000HEKGU5	n/d		EUR 5,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	4.015%	Soft Bullet
XF0000HEKGV3	n/d		EUR 42,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKGW1	n/d		EUR 55,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKGX9	n/d		EUR 2,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKGY7	n/d		EUR 2,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKGZ4	n/d		EUR 1,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKG07	n/d		EUR 14,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKG15	n/d		EUR 16,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKG23	n/d		EUR 17,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKG31	n/d		EUR 1,000,000	07/10/2025	07/10/2055	07/10/2056	Fixed rate	3.970%	Soft Bullet
XF0000HEKG49	n/d		EUR 1,000,000	07/10/2025	09/10/2045	09/10/2046	Fixed rate	3.440%	Soft Bullet

© 2026 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 OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE APPLICABLE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S MATERIALS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S MATERIALS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND MATERIALS DO NOT CONSTITUTE OR PROVIDE LEGAL, COMPLIANCE, INVESTMENT, FINANCIAL OR OTHER PROFESSIONAL ADVICE, AND 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 DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES OR OTHERWISE MAKES AVAILABLE ITS MATERIALS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

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 THEM BEING CONSIDERED A BENCHMARK.

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 or assessment 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 or assessment 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 or assessment 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 Investors 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.moody's.com under the heading "Investor Relations – Corporate Governance – Charter and Governance Documents – Director and Shareholder Affiliation Policy."

Moody's SE Japan K.K., Moody's Local AR Agente de Calificación de Riesgo S.A., Moody's Local BR Agência de Classificação de Risco LTDA, Moody's Local MX S.A. de C.V., I.C.V., Moody's Local PE Clasificadora de Riesgo S.A., Moody's Local PA Clasificadora de Riesgo S.A., Moody's Local CR Clasificadora de Riesgo S.A., Moody's Local ES S.A. de CV Clasificadora de Riesgo, Moody's Local RD Sociedad Clasificadora de Riesgo S.R.L. and Moody's Local GT 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 61 005 599 657 AFSL 556969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 156 972 AFSL 583569 (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 from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" 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, EU. In the European Union, each of Moody's Deutschland GmbH and Moody's France SAS provide services as an external reviewer in accordance with the applicable requirements of the EU Green Bond Regulation. 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 satisfy 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.