

A company of LBBW

Berlin Hyp

**Deal-related Roadshow:
First Blockchain Pfandbrief**
EUR 100 mn., due 29.07.2027

All data as of 31 December 2023 – if not marked differently

22 July 2024

 **Finanzgruppe**



**Berlin Hyp
Blockchain
Pfandbrief**

**“The next generation for markets,
the next generation for securities,
will be tokenization of securities.”**

—
Larry Fink, CEO Blackrock, 2022

Agenda

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Berlin Hyp – Brief Overview



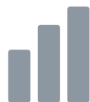
- Founded 1868
- One of Germany's leading commercial real estate financiers
- Main refinancing instrument: Mortgage Pfandbrief



- **Since 1 July, 2022 Berlin Hyp AG is a 100% subsidiary of Landesbank Baden-Württemberg**
- Member of the Savings Banks Finance Group
- Institutional Protection Scheme; 0% risk-weighted for savings banks



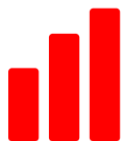
- ESG bonds as an important element of the funding mix
- Active in three ESG bond categories (Green, Social and Sustainability-Linked Bonds)
- First issuer of a Green Pfandbrief and first bank to issue a SLB
- Most active issuer of Green Bonds (with 23 benchmark-sized bonds outstanding) from the group of European commercial banks (Mortgage Pfandbriefe and Senior Unsecured)



	2023	2022	2021
Total Assets (EUR bn)	35.5	34.4	36.2
Operating income before risk-provisioning (EUR mn)	310.7	261.2	239.3
Allocation to the fund for general banking risks (EUR mn)	50.0	75.0	187.0
Pre-tax profit (EUR mn)	123.9	99.7	50.4
CET1 Ratio	15.4%	13.7%	14.3%

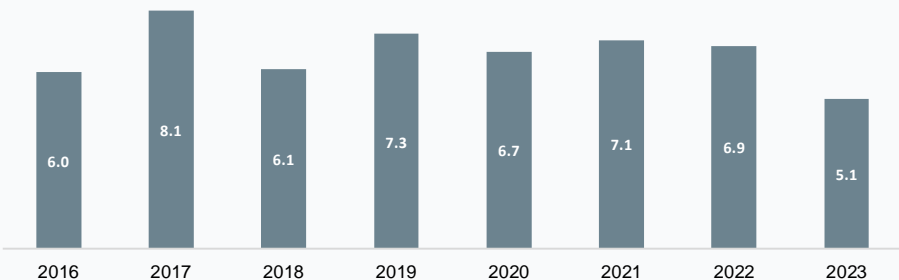


Ratings	Senior Non-Preferred	Senior Preferred	Pfandbriefe
Moody's	A2	Aa2	Aaa
Fitch	A+	AA-	--

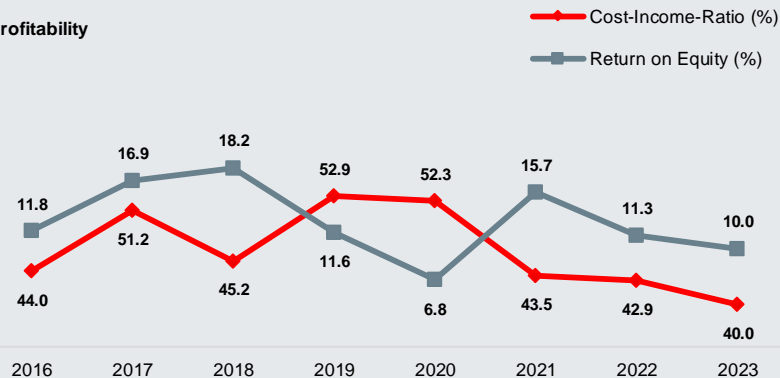


Key Figures and Business Development

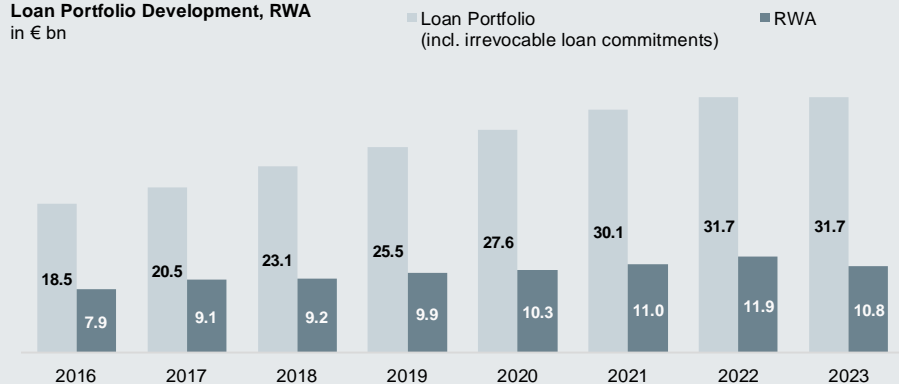
New lending
in € bn, incl. long-term extension



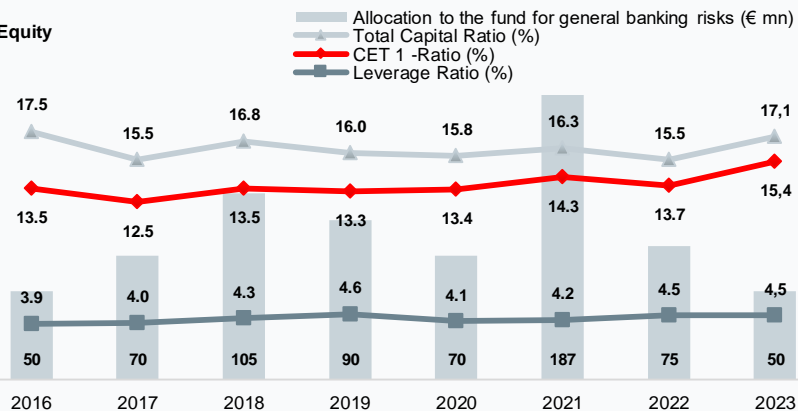
Profitability

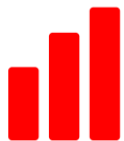


Loan Portfolio Development, RWA
in € bn



Equity

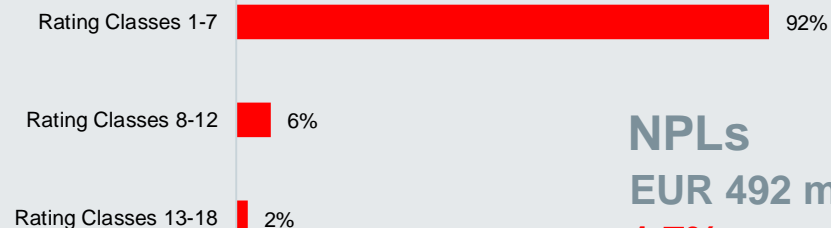




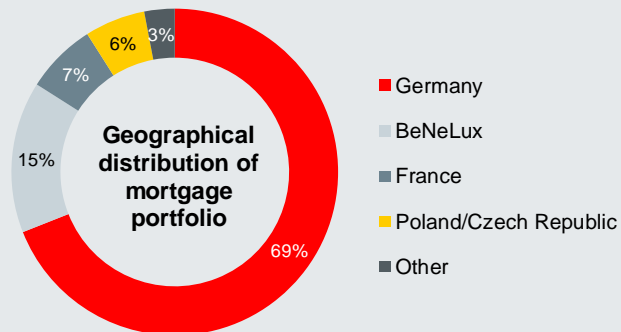
Loan Portfolio

- High quality loan portfolio
- Strict underwriting criteria are the basis for low NPL ratio
- No exposure to US CRE
- Ongoing close monitoring and stress testing of loan portfolio

Rating Classes

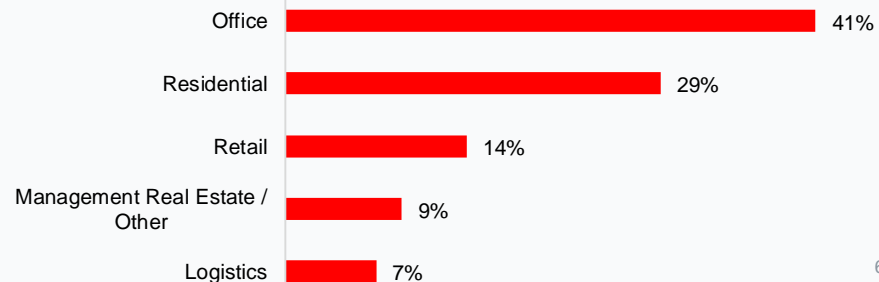


NPLs
EUR 492 mn
1.7%



Ø LTV
55.7%

Type of Use





Berlin Hyp's Ratings

	MOODY'S		FitchRatings	
	Rating	Outlook / Watch	Rating	Outlook/ Watch
Mortgage Pfandbriefe	Aaa	Stable	–	–
Senior Preferred	Aa2	Stable	AA-	Stable
Senior Non-Preferred	A2	Stable	A+	Stable
Short Term	P-1	Stable	F1+	Stable
Viability / Adj. BCA	a3	Stable	bbb+	Stable

Latest rating actions

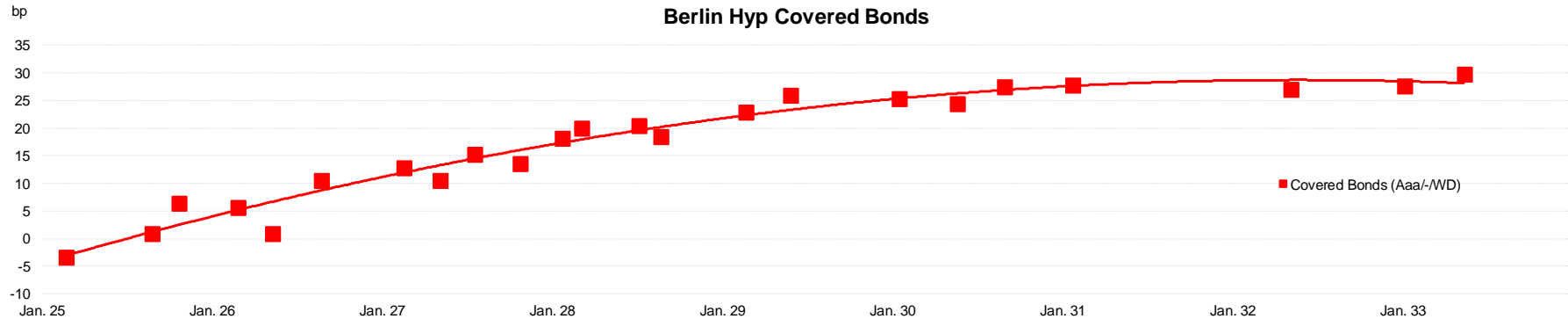
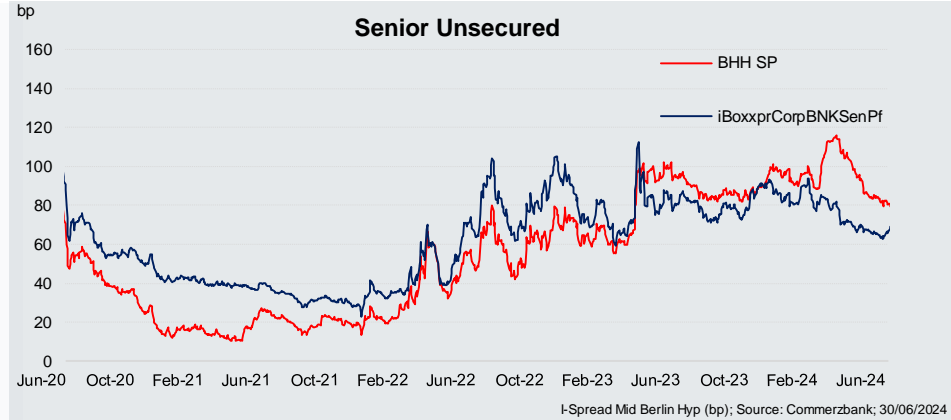
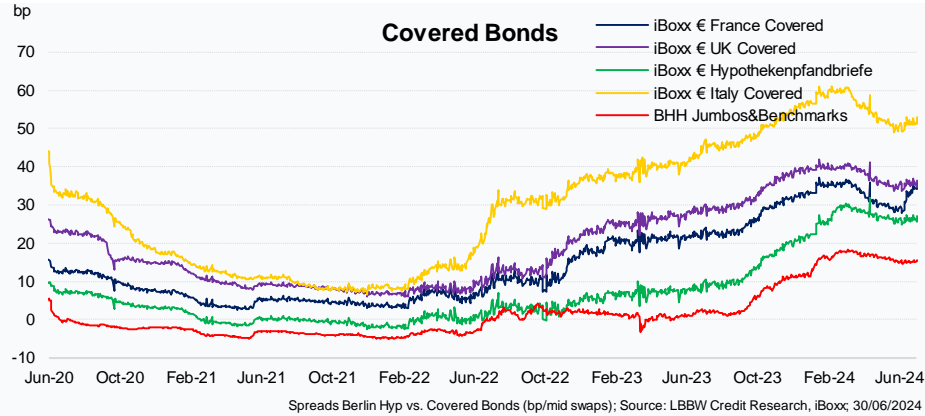
July 2024: Following the latest reform of the institutional protection scheme of the Savings Banks Finance Group, FitchRatings upgraded Berlin Hyp's Long-Term Issuer Default Rating (IDR) to "A+" (previously "A-"). FitchRatings also upgraded the Senior Preferred Rating to "AA-" (previously "A") and the Short-Term IDR from "F1" to "F1+". The outlook is stable.

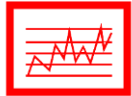
May 2024: Moody's confirms Berlin Hyp's "A2" senior non-preferred ratings.

March 2024: Moody's upgraded Berlin Hyp's long term deposit, issuer and senior unsecured ratings from "Aa3" to "Aa2" with a stable outlook. Moody's also upgraded the bank's Adjusted BCA from "baa1" to "a3" with a stable outlook. Previously, in February 2024, the ratings were on review for upgrade due to changes to the statutes of the Savings Banks Finance Group's institutional protection scheme.

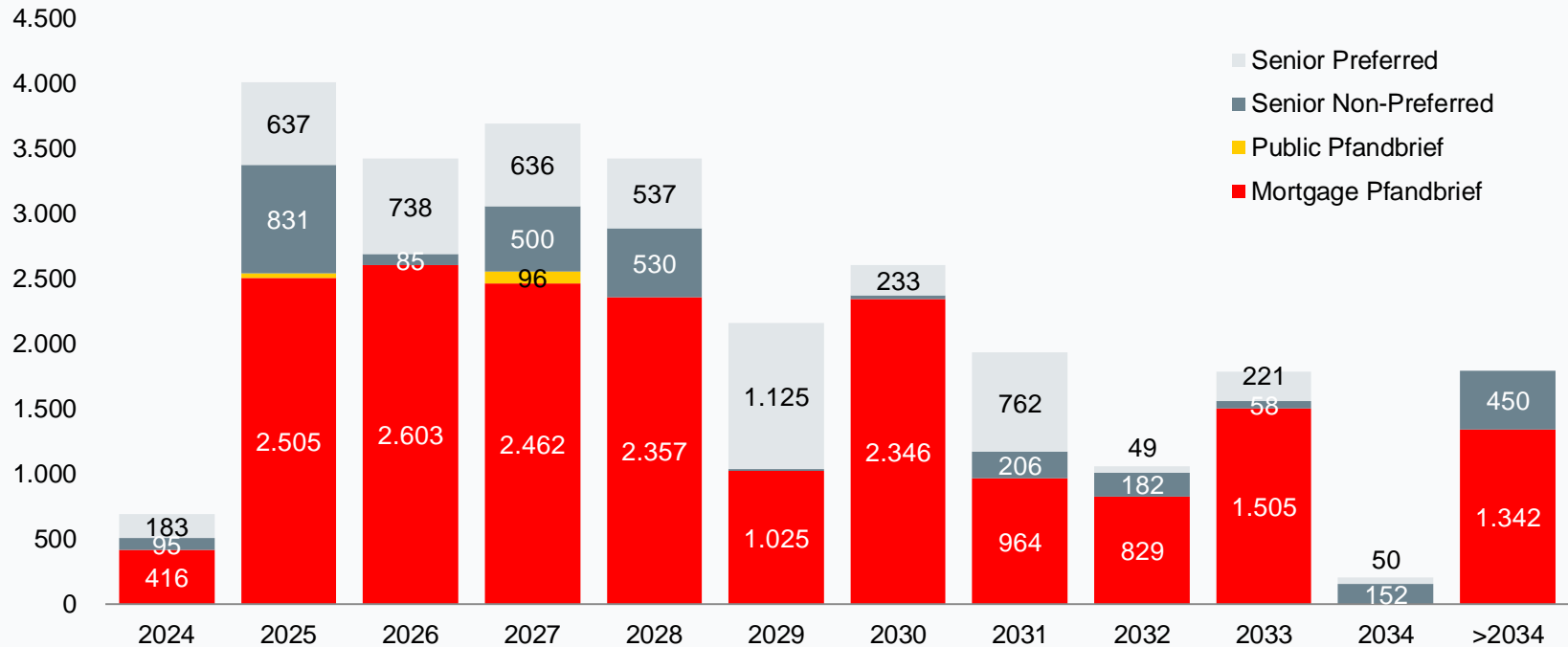


Berlin Hyp in the Capital Market





Berlin Hyp's Maturity Profile



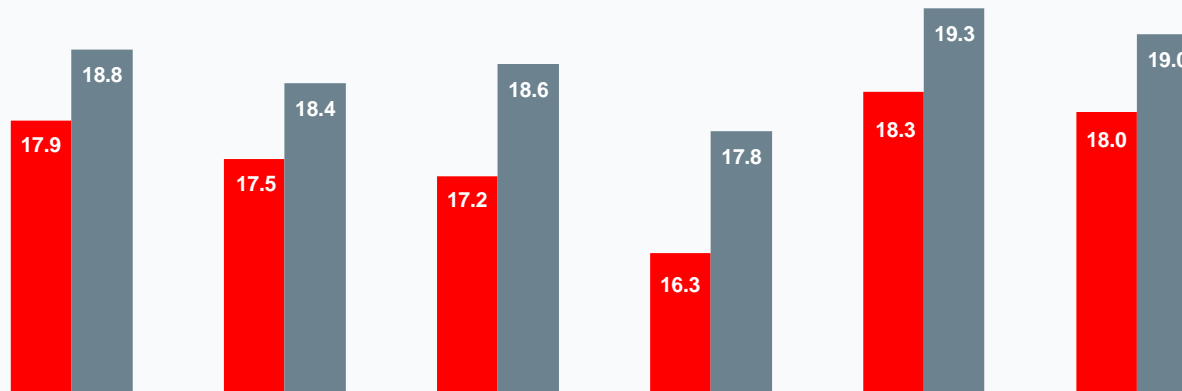


Mortgage Pfandbrief



in EUR bn

- Mortgage Pfandbrief
- Mortgage Cover Pool

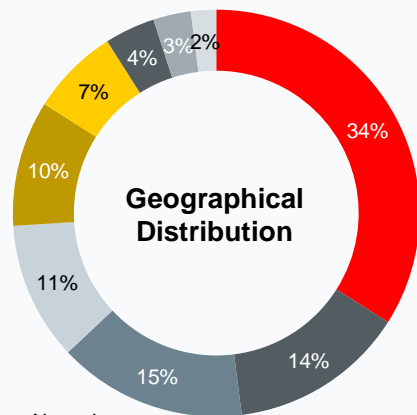


	Nominal value		Net present value		Risk-adjusted net present value*	
EUR mn	30/06/2024	30/06/2023	30/06/2024	30/06/2023	30/06/2024	30/06/2023
Mortgage Pfandbrief	17,935.2	17,452.9	17,227.8	16,267.5	18,286.9	18,036.9
Cover Pool	18,823.0	18,394.4	18,640.0	17,797.2	19,342.4	19,012.6
Over-collateralization (OC)	887.8	941.5	1,412.3	1,529.7	1,055.5	975.7
OC in %	4.9%	5.4%	8.2%	9.4%		

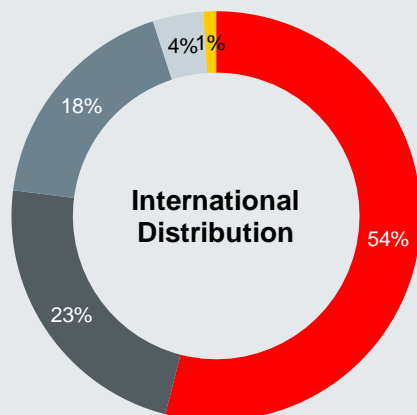
*The static approach was used for currencies, the dynamic approach for interest when calculating the risk-adjusted net present value.



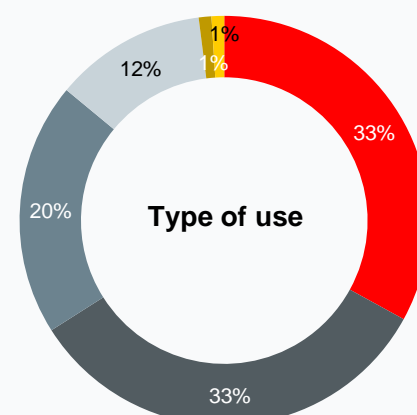
Composition of Mortgage Cover Pool



- Abroad
- North Rhine-Westphalia
- Berlin
- Other states from former West Germany
- Bavaria
- Hesse
- Saxony
- Other states from former East Germany
- Lower Saxony



- The Netherlands
- France
- Poland
- Czech Republic
- Belgium



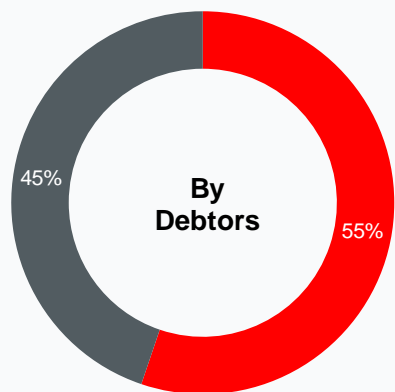
- Office buildings
- Multi-family dwellings
- Retail buildings
- Other commercially used buildings
- Industrial buildings
- Single-family houses

Cover pool volume: EUR 18,823.0 mn, of which original mortgage cover assets: EUR 17,818.5 mn; Share of foreign countries: EUR 6,188.0 mn

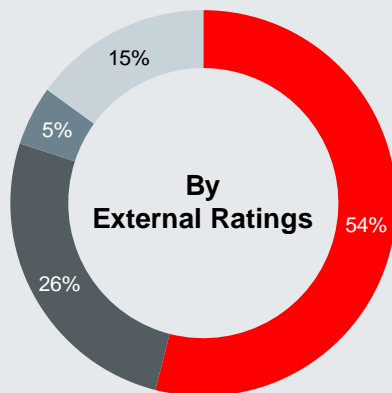
Data as of 30/06/2024



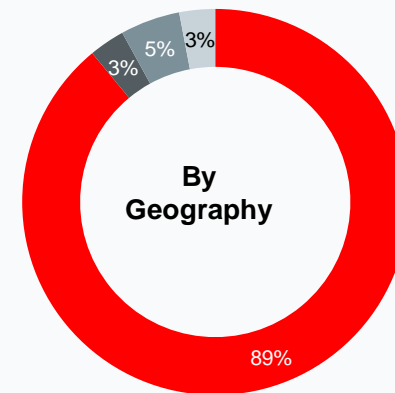
Composition of Mortgage Cover Pool – Further Cover Pool Assets



- Banks (Guaranteed, Covered Bond, Senior Unsecured)
- Government



- AAA
- AA+
- AA-
- not rated



- Germany
- France
- Canada
- Sweden

Cover pool volume: EUR 18,823.0 mn, of which further cover assets: EUR 1,004.5 mn

Data as of 30/06/2024

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What is Blockchain?

Blockchain technology refers to a **decentralised IT infrastructure**

- for **validating, storing and updating data records** (for example, transactions).
- It is a form of **distributed ledger technology (DLT)**.

In a blockchain, transactions are stored in chronologically ordered blocks using cryptographic processes.

- The order of the data records is unchangeable. The linked blocks form a shared, non-manipulatable register (ledger).

With a blockchain, values and information can be transferred directly between participants (**peer-to-peer**) - without the need for central actors.

Blockchains use consensus mechanisms (e.g. proof of work, proof of stake).

- These form the set of rules on the basis of which the participants in a network check, confirm and irrevocably cryptographically link transactions.
- This means that transactions/values can only be carried out/used once, which prevents the problem of “**double spending**” and ensures network security.

Advantages

Safety and Security

- No settlement/counterparty risk (possible)
- Single Point of Truth
- Increased transparency



Performance

- Automation through smart contracts
- Automatic and real-time settlement
- Open 24/7 (technology)



Lower costs

- Fewer intermediaries
- Lower (interim) funding costs



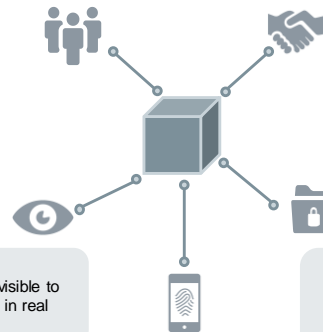
Trust network based on economic incentives and cryptography

Peer-to-Peer

→ The participants trade directly with each other without the need for a trustworthy intermediary.

Consensus-driven

→ The participants must jointly agree on the state of the ledger. There is a single shared version of the truth.



Transparent

→ All transactions are visible to all network participants in real time.

Immutable

→ Transactions are recorded in such a way that they cannot be deleted and it is impossible to change data without the change being registered.

Cryptographically secured

→ Modern cryptographic methods are used to encrypt data to protect it from external actors.



Regulation as an Enabler – Security for Issuers and Investors

Germany

- June 2021: Act on the Introduction of Electronic Securities (“eWpG”), which lists two types of registers, namely central and crypto securities registers, and enables the issue of bearer bonds and units in funds by electronic means.
- June 2022: Regulation on crypto fund units (“CryptoFAV”) entered into force.
- October 2022: Ordinance on the Requirements for the Electronic Securities Register (“eWpRV”) came into force, which regulates details of the eWpG.
- Section 8 para. 3 of the Pfandbrief Act states that the certificate of the existence of the prescribed cover must be filed with the same registry where the terms and conditions of issue of the Pfandbrief are filed.
- December 2023: The Future Financing Act amended the Electronic Securities Act (eWpG) and bearer and registered shares are covered by the scope of the eWpG.

EU

Digital Finance Package (introduced by the European Commission in 2020)

- MiCAR (Markets in Crypto Assets Regulation)
 - Regulation on markets for crypto assets for the offering of crypto tokens and stable coins; uniform authorization requirement for crypto-related business models throughout the European Union.
- DLT Pilot Regime
 - Provides a limited “sandbox” for DLT market infrastructures for the trading and settlement of DLT-native securities, while allowing an exemption from MiFIR and CSDR, which are currently incompatible with the use of DLT and thus hinder potential innovation.
 - Will promote the issuance of digital bonds, which for the first time can be listed and traded on trading venues as well as settled through settlement systems.

Central banks

- BdF: The Banque de France has participated in numerous pilot projects, in particular by providing a CBDC that was used for the settlement of digital securities.
- ECB / Digital Euro (ECB Wholesale Settlement Initiative): Trial phase (May - Nov. 2024) to provide a platform-independent solution for the settlement of blockchain-based transactions in central bank money.

Listing agencies

- The Luxembourg Stock Exchange has created an alternative for listing digital securities with the ability to quote indicative prices on the secondary market without being subject to regulation that excludes them from admission to trading.
- SDX enables the settlement of digital bonds via a distributed ledger-based CSD network through atomic and instant swap technology that does not require a central clearing counterparty. It also offers dual listing on both traditional and digital exchanges.

Other parties involved

- Law firms have been working intensively in this area and have spent a lot of time trying to understand the new dynamics and their impact on legal documentation.
 - The first commentary on the eWpG is available.
- Rating agencies have started to assess some of the digital pilots published so far. Moody's has released a statement following the City of Lugano's digital bond on SDX, addressing the additional technological risk.
- Some banks have expanded their own blockchain activities and have been involved in the latest pilot projects.



Traditional Pfandbrief vs. Blockchain Pfandbrief

Traditional Pfandbrief

Pfandbriefe are **interest-bearing covered bonds** issued by credit institutions on the capital market on the basis of the **German Pfandbrief Act (PfandBG)**.

The **claim** is evidenced in its original form by the possession of a physical certificate (actual certificates).

Trustee certificate: Prior to the issue, the trustee personally checks that the prescribed collateral exists and that the **cover assets** have been entered in the relevant cover register.

Nowadays, instead of individual certificates, a **global certificate** is issued, which is held in custody by a central securities depository (e.g. Clearstream, SIX).

- The global certificate uniformly securitizes the rights of the security holders.
- The holders of a security therefore no longer have a certificate, but an electronic record.

Blockchain Pfandbrief

Blockchain Pfandbrief: Pfandbrief in which ownership is determined by the blockchain entry in the register instead of the physical certificate.

Since the **Act on the Introduction of Electronic Securities** came into force, the **trustee confirmation** can also be made **digitally** in the case of electronic issues (Section 8 (3) PfandBG).

Smart contracts: Important information about the bonds, such as IDs, issue amount, term, coupon, options or specific transaction data such as price, counterparty, etc. can be integrated into the underlying code.

Since June 2021, “**electronic securities**” can be issued in Germany in accordance with Section 2 (1) eWpG.

- “An electronic security is issued by the issuer making an entry in an electronic securities register (Section 4 (1) eWpG) instead of issuing a securities certificate.”
- Electronic securities registers are central registers pursuant to Section 12 eWpG and **crypto securities registers** pursuant to Section 16 eWpG.





Berlin Hyp Blockchain Pfandbrief

Berlin Hyp issues the first Blockchain Pfandbrief >> Tradition Becomes Future <<

Pfandbrief – recipe for success: tradition und innovation

“The Pfandbrief is so resilient and has lost none of its appeal because legislators and Pfandbrief banks have repeatedly managed to combine tradition and innovation in its further development, whereby the Pfandbrief itself has always remained true to its core, but has also demonstrated a high degree of adaptability.”

Jens Tolckmitt, Hauptgeschäftsführer, Verband deutscher Pfandbriefbanken (vdp)

Structure

- 1) Blockchain Pfandbrief in syndicated format
- 2) Pricing expected on 2 August 2024
- 3) Maturity: 29 July 2027
- 4) Nominal value: EUR 100 mn
- 5) Lead Manager: DekaBank und LBBW
- 6) eWpG-Registry DekaBank
- 7) Lead investor: Bankhaus Metzler
- 8) DLT software / network (private Blockchain) provided by SWIAT GmbH

Vision for the future

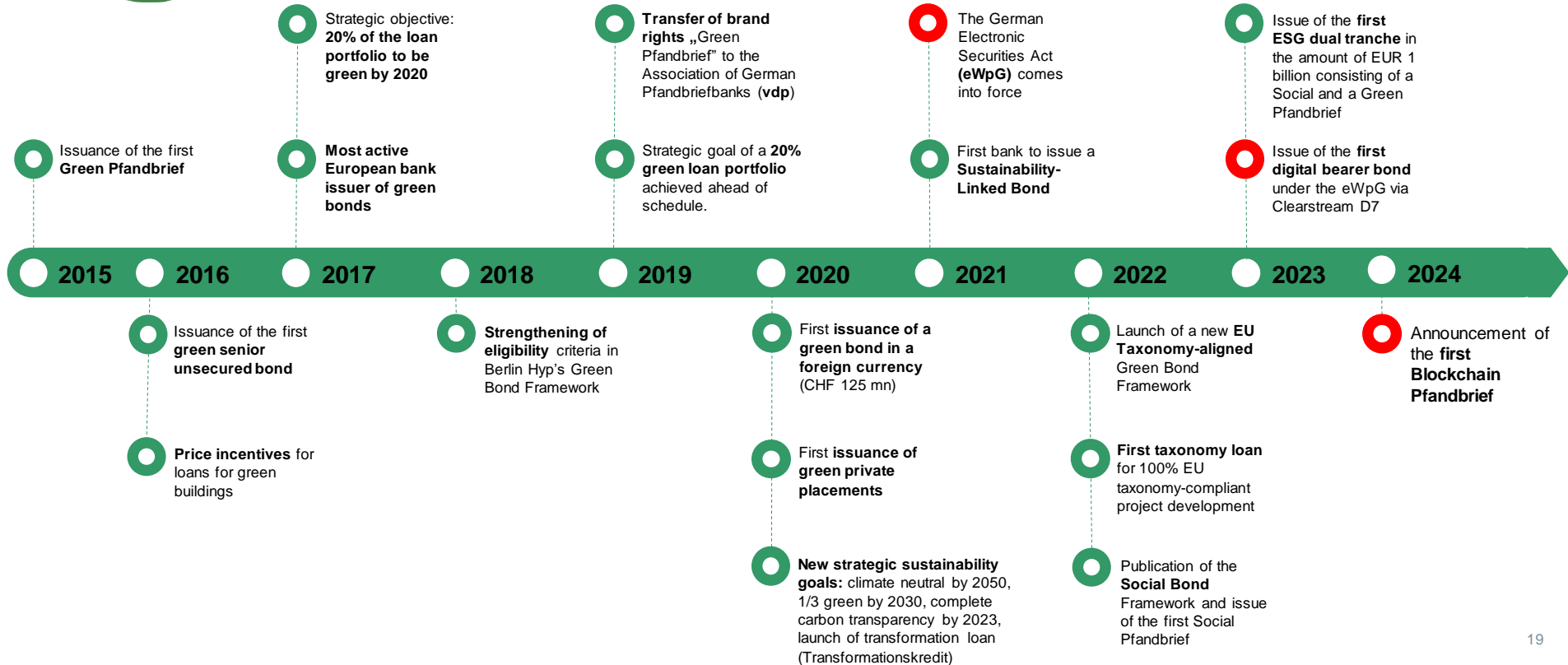
- 1) Implementation of further Pfandbrief processes on the blockchain
- 2) **Product life cycle management** on the blockchain
- 3) **Atomic Settlement:** Blockchain Pfandbrief against digital cash solutions using smart contracts and without intermediaries

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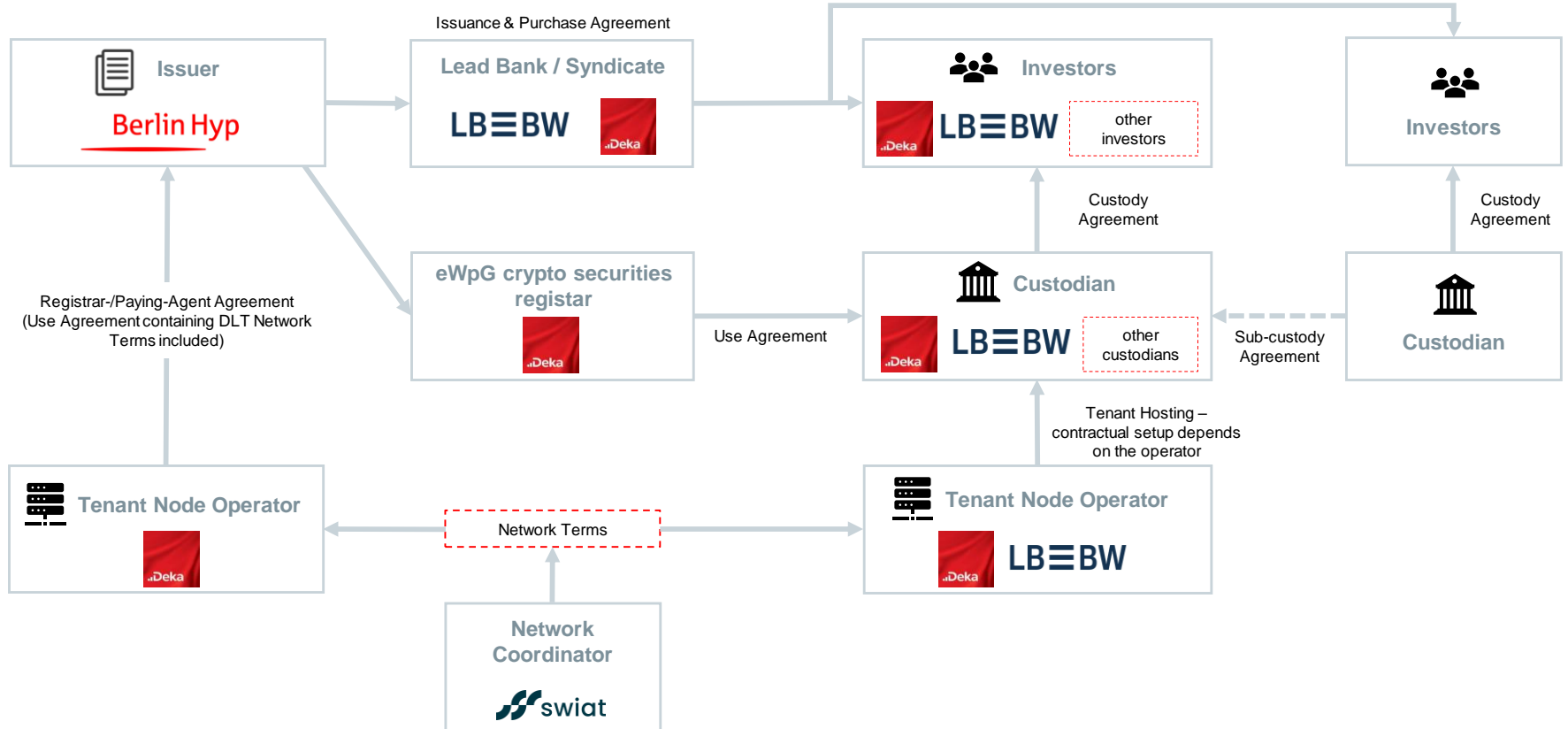


Our Path to Becoming a Modern Real Estate Financier – Digital and Sustainable



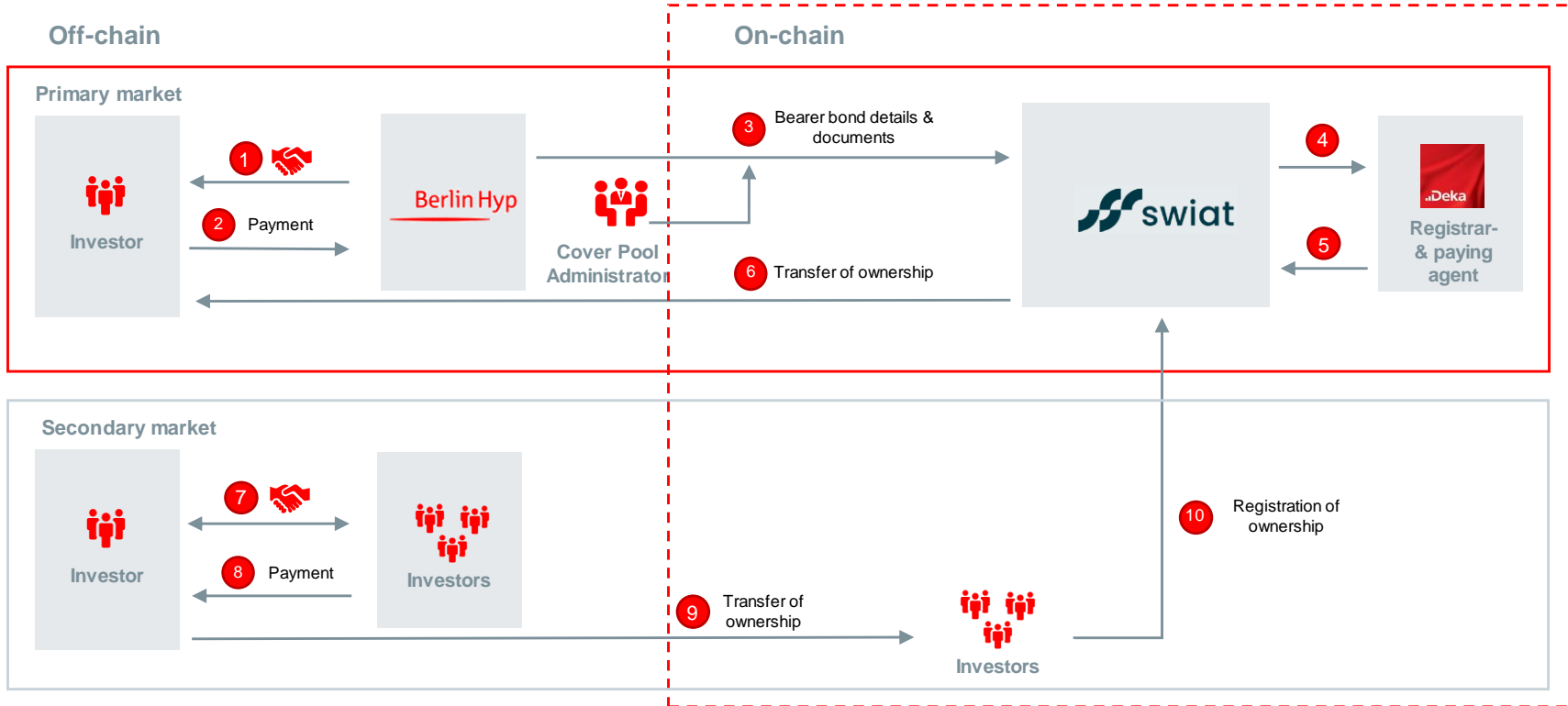


Roles and Responsibilities: Crypto Securities as a Mortgage Covered Bond (Collective Entry)



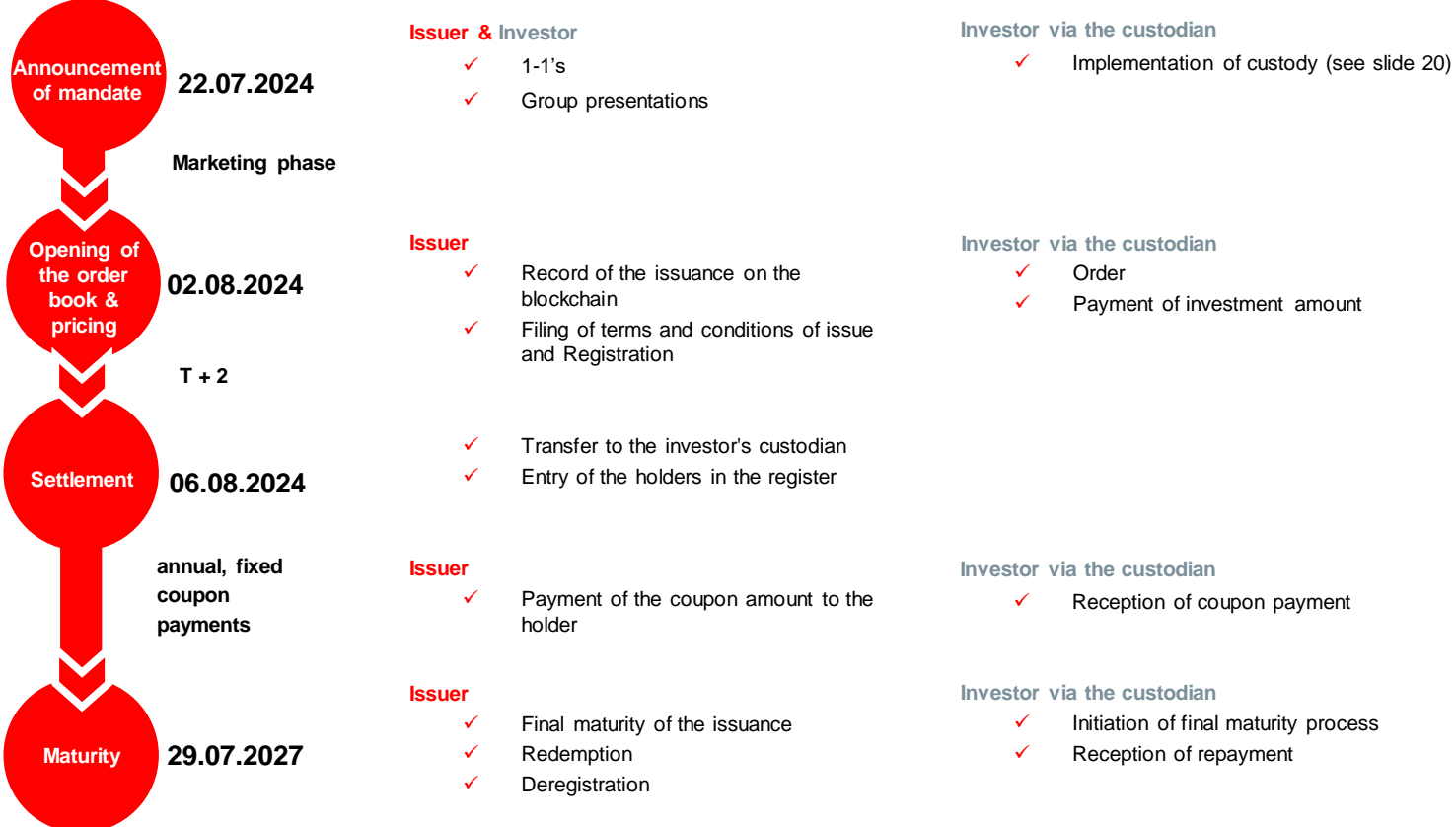


Process – Settlement via SWIAT Software and Deka as a Registrar and Paying Agent





Timeline for Potential Investors





Who is SWIAT GmbH?

A scalable, holistic blockchain financial market infrastructure



- Develops blockchain software for financial institutions
- Founded in 2022
- Shareholder of the joint venture

„DekaBank



LB≡BW



SWIAT ecosystem



- 25 institutes on SWIAT in production
- Regulatory-compliant blockchain ecosystem¹
- Decentralized blockchain with 9 reputable validators

adesso

„DekaBank

GFT

LB≡BW

NTT DATA

sopra steria



- Strong legal framework with clear roles and responsibilities
- Provides need-to-know principle with golden source for operational reliability and scalability

Possible issuer benefits

- ✓ Lower costs in a scaled setup
- ✓ Increased fungibility of illiquid assets
- ✓ T+0 settlement without operational settlement risk
- ✓ Possibility of further asset classes
- ✓ Opportunity for cross-institution automation (linking to payment systems, etc.)

Selected transactions on SWIAT

Central bank money & crypto securities (eWpG) in ECB trials

- ✓ Payment-versus-delivery settled without an intermediary using crypto securities according to eWpG and central bank money. An official ECB trial transaction – [Press release](#)

Digital registered bonds

- ✓ Savings banks issue and settle digital NSCs via SWIAT blockchain and software – [FAZ.de](#)

Fund shares on the SWIAT blockchain

- ✓ Deka Investment issues tokenized fund units on the SWIAT blockchain – [Press release](#), [Ledger Insights](#)

¹ – recognizes Basel 3 requirements, specifically standards according to SCOR

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Frequently Asked Questions

Blockchain Technology

What is a digital asset?

A digital instrument issued through the use of distributed ledger or similar technologies (this does not include digital forms of fiat currency).

Native digital asset: a security that is originally issued, recorded and held in a DLT-based system.

What is a distributed ledger?

A collection of data that is distributed across multiple *nodes* (a node is a device, usually a computer, that participates in a blockchain network) and whose consistency is enforced using distributed ledger technology.

What is DLT?

Distributed Ledger Technology: *A means of recording information via a decentralized ledger.* These technologies allow nodes in a network to propose, validate and consistently record state changes across all nodes in the network without relying on a central trusted party to provide reliable data.

What does atomic settlement mean?

Atomic settlement refers to the simultaneous exchange of different assets (tokens) on a blockchain, whereby the transaction is only completed if all conditions (e.g. from smart contracts) are met. This method ensures that the transaction is executed in full or not at all.

What are smart contracts?

Smart contracts are *self-executing programs* that are stored in a blockchain and are executed when certain conditions are met.

They are generally used to automate the legal execution of a contract so that all parties involved have immediate certainty of the outcome without the need for an intermediary or a time-lag.



Frequently Asked Questions

Blockchain Pfandbrief (1)

What is the difference between a public blockchain and a private blockchain?

Public blockchains are freely accessible to everyone. Private blockchains are only available to a defined group of users, e.g. regulated financial institutions. Public blockchains are characterized by decentralization, transparency, international use and a comparatively larger group of users. Private blockchains generally offer a higher level of privacy, security and functions tailored to their specific use cases. This can also facilitate compliance with regulatory requirements.

What is a Tenant Node Operator and a Network Coordinator?

A Tenant Node Operator is a company that provides access to the SWIAT DLT platform. In its role as Network Coordinator, SWIAT coordinates the development, provision and network upgrades of the DLT platform.

Will the Pfandbrief have an ISIN?

Yes, the Blockchain Pfandbrief has an ISIN as a bearer instrument. Only the form of issue distinguishes the Blockchain Pfandbrief from the traditionally issued.

Are blockchain Pfandbriefe ECB-eligible?

No, blockchain Pfandbriefe (crypto securities) cannot currently be deposited with the ECB as collateral.

Will the blockchain Pfandbrief be listed at a stock exchange?

Currently not possible.

Can the digital Pfandbrief be traded on secondary market?

The bond can be traded over the counter. The lead managers will act as market makers and aim to ensure sufficient secondary market liquidity.



Frequently Asked Questions

Blockchain Pfandbrief (2)

Will the Blockchain Pfandbrief be rated?

Yes, this is planned.

What is the risk weight of a blockchain Pfandbrief?

The risk weighting of a blockchain-based Pfandbrief is similar to that of a traditional Pfandbrief. The Basel Committee on Banking Supervision is investigating increased capital requirements for crypto assets issued on public chains. Berlin Hyp's blockchain Pfandbrief, on the other hand, is issued on a private blockchain.

What happens if the risk weight changes during the term for regulatory reasons?

In this case, the issuer will convert the blockchain Pfandbrief into a conventional Pfandbrief.

What technical precautions are required to receive the Pfandbrief?

The investor's custodian bank requires access to the DLT.

What must the investor or their custodian do in advance?

All parties involved should check the need for an NPP, especially when participating in a digital issue for the first time. Furthermore, documentation requirements and outsourcing issues must be checked.

Are there any special advantages for investors in this issue?

Investors can gain experience by participating in this bond and prepare themselves for this market structure. Realizable benefits are expected in the medium to long term once the technology has matured.



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You will find further information on Berlin Hyp if you visit our website www.berlinhyp.de/en, u.a.:

- Ratings
- Green Bonds
- Sustainability-Linked Bonds
- Social Bonds
- Blockchain Pfandbrief
- Financial Reports
- Basisprospekt/ Final Terms
- §28 PfandBG / HTT
- Euro Commercial Paper Programm
- Awards



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