

# Considerations for risk factors and disclosure in DLT bond offering documents

November 2023



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The market for DLT-based debt instruments is nascent and the number of precedents reviewed is very limited. This document should be considered in such context. ICMA makes no comment as to whether the precedents reviewed are satisfactory precedents or representative samples and nothing herein should be read to imply any such judgment. Market participants must analyse the factors relevant to each new transaction at the time and make their own determination as to the appropriate scope and relevant and necessary content of risk factors and other disclosure.

# Acknowledgements

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ICMA is grateful to Alexander Tollast at Clifford Chance for chairing ICMA's DLT Bonds Legal Subgroup and leading the review of risk factors and disclosure in DLT-based bond offering documents, with Matteo Sbraga and Federica Gamen at Clifford Chance.

ICMA would further like to thank members of its DLT Bonds Legal Subgroup, which brings together market practitioners and legal experts from the below firms, for their feedback, drafting suggestions and commentary.

ABN Amro, Allen & Overy, Ashurst, Blackrock, BNP Paribas, Citi, Clifford Chance, CMS Francis-Lefebvre, Danske Bank, ESM, Goldman Sachs, Hogan Lovells, ING, JP Morgan, King & Wood Mallesons, Linklaters, Luxembourg Stock Exchange, NatWest, Simmons & Simmons.

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# Executive Summary

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Distributed ledger technology (DLT) and blockchain represent a new frontier in the evolution of fixed income securities issuance and trading. In light of the continued increase in the frequency of issuances and to foster transparency in this nascent market segment, ICMA's DLT Bonds Legal Subgroup analysed offering documents of DLT-based debt securities across a sample of jurisdictions globally. The purpose was to identify, if possible, any areas of convergence as to the scope and nature of risk factors and other disclosure.

A key observation is that additional risk factors feature in bond offering documents to address risks for investors relating to (i) the use of DLT, (ii) the legal and regulatory environment for DLT-based debt instruments and (iii) the limited liquidity for such debt instruments. The number and scope of such risk factors will largely depend on the structure of the transaction (particularly the type of DLT infrastructure) and other considerations, including, but not limited to, the type of issuer, listing considerations, and the choice of governing law.

It will continue to be necessary to take a "case-by-case" approach to risk factors and other disclosure in each transaction as this is an innovative area where certain structures provide more complexity than others. In addition, as the ecosystem evolves, potentially leading to greater interdependency with different technological infrastructures and potentially providing different options for the settlement of the cash leg, transaction parties will need to carefully consider how to address such points in offering documents, the extent to which risk factors will need to be adapted, and whether other disclosure needs to be modified or added.

# Introduction

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Distributed ledger technology (DLT) and blockchain represent an exciting new frontier in the evolution of fixed income securities issuance and trading. DLT-based debt instruments, involving the use of DLT or blockchain in one form or another, promise to bring about significant efficiencies in the automation of issuance, post-trade and asset-servicing processes, with operational efficiencies such as streamlining issuance flows, identifier creation, settlement cycle compression, and payments automation.

The market for DLT-based debt instruments has been tested by several issuers including the World Bank, the European Investment Bank and other financial and corporate issuers around the world.<sup>1</sup>

Given the innovative and complex nature of such transactions, the preparation of the documentation relating to such transactions can take longer than for non-DLT-based debt instruments, in relation to which ICMA has already published some model documentation to help promote consistency and efficiency across the market.

Cross-border DLT bond markets face a number of legal, regulatory and operational challenges. These hamper its scalability and ability to become a reliable source of funding for the real economy. The objective of ICMA's DLT Bonds Working Group is to foster scalable, efficient and liquid cross-border DLT bond markets. To this end, the Working Group brings together a broad range of stakeholders across ICMA's membership, including issuers, banks, investors, central banks, market infrastructures, law firms, credit rating agencies and technology providers.

To foster transparency in this nascent market segment and in light of the continued increase in the frequency of issuances, ICMA's DLT Bonds Legal Subgroup analysed recent offering documents for issuances of DLT-based debt instruments with a view to identifying, if possible, any areas of consensus as to the scope and nature of risk factors and other disclosure. This document has been produced to help issuers and underwriters as they consider risk factors and other disclosure, but deliberately it does not contain recommendations for a form of model documentation, for reasons that will be made clear.

For the avoidance of doubt, this analysis does not focus on changes to be made to the terms and conditions of DLT-based debt instruments and should be read in conjunction with Question 7 (*"How does DLT bond documentation generally differ from traditional legal bond documentation?"*) of ICMA's [FAQ on DLT and blockchain in bond markets](#).

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<sup>1</sup> See [ICMA's FinTech tracker](#) of DLT-based bond issuance, trading, settlement, distribution as well as repo and securities-lending transactions.

# Review of DLT bond offering documents

ICMA's DLT Bonds Legal Subgroup conducted a review of around a dozen offering documents and final terms used for the issuance of DLT-based debt instruments, in order to provide empirical evidence to support any potential conclusions. The review is deliberately focussed on recent precedents of SSA issuers and financial and non-financial institutions across a sample of jurisdictions globally, reflecting the latest views of what market participants deemed to be appropriate for disclosure to investors.

The details of those offering documents (or final terms) which are publicly available and have been reviewed are listed below. For reasons of confidentiality, the other offering documents reviewed as part of the analysis cannot be disclosed as the relevant offering documents are not publicly available. However, these cover precedents under Australian law, German law, and Hong Kong law.

	Issuer	Governing Law <sup>2</sup>	Issuance date and identification number
1	Société Générale SFH	French Law	31 January 2022 FR0013510518
2	Inter-American Development Bank	Spanish Law	14 July 2022 ES0313681001
3	UBS AG, London Branch	Swiss Law	25 November 2022 CH1228837865
4	European Investment Bank	Luxembourg Law	29 November 2022 LU2542747121
5	European Investment Bank	Luxembourg Law	31 January 2023 LU2557886475
6	European Investment Bank	Luxembourg Law	19 June 2023 LU2637450516
7	International Bank for Reconstruction and Development	English Law	23 October 2023 XS2615318289

<sup>2</sup> See point f) of "Additional points for consideration" below for more information on the choice of governing law.

# Summary of key findings

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## Risk factors

The analysis showed that offering documents for DLT-based debt instruments have typically included additional risk factors. Such risk factors can broadly be divided into the following three (3) different categories and we have picked out various examples for illustrative purposes below:

### 1) Technology risks:

- cybersecurity risks (where such risks might be increased over time due to developments in cryptographic technologies and techniques);
- outage time risks and connection error risks in the chain;
- exploitable flaws which may result in security breaches;
- risks relating to the malfunction, unexpected function, coding or human error or unexpected functioning of the platform which may have adverse consequences on the settlement, the registration and the transfer of DLT bonds;
- malicious actors manipulating distributed ledger networks and smart contract technology;
- those related to the dependency of interoperability between different platforms;
- wherein platforms are being used for the first time and the technology may contain inherent flaws and limitations;
- risks relating to assets accessible through DLT being lost, stolen or inaccessible;
- risk of technological immutability (so that, if processed in error, a transaction to buy or sell a bond cannot be reversed);
- due to scheduled and routine maintenance to the platform, the participant may face short periods of time where they may not be able to access the underlying platform to buy or sell the DLT bonds, or receive information regarding the DLT bonds;
- failure to update (or update in a timely fashion) a protocol or network which will in turn become more susceptible to the risk of exploits or hacks;
- risks associated with the use of public blockchains (including the risk of forking, the risk of failure of, or disruption to, public blockchains and the risk of it becoming known to the public which person holds the digital wallet associated with a specific public address); and
- related to the use of tokens/representations of fiat currency for settlement and payment, and the conversion thereof to and from fiat currency;

### 2) Legal and regulatory risks:

- blockchain technology is subject to a rapidly evolving regulatory landscape (including tax treatment), which might affect the security, privacy, the ability to buy or sell bonds issued using DLT or other regulatory aspects of DLT transactions and trigger changes to, for example, the blockchain networks and relevant documentation;
- in relation to the laws and regulations in respect of DLT-based debt instruments being nascent, highly divergent and non-harmonised across the European Union; and
- the risk of there being changes in supervisory practices.

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### 3) Liquidity risks:

- in relation to the liquidity of DLT-based debt instruments potentially being adversely affected by a lack of public trust in the underlying technology;
- wherein the inability to list and admit to trading DLT-based debt instruments in certain jurisdictions; and
- the lack of an existing active trading market for DLT-based debt instruments.

None of the above risk factors appear systematically in each of the precedents that were analysed, although in nearly every case there was at least one risk factor addressing a risk from each of the above three categories. The above list should not be taken as a definitive list of risk factors to be inserted in offering documents for DLT-based debt instruments. See “Additional points for consideration” for some examples of factors to consider when drafting risk factors.

### Other disclosure

The review found that offering documents have also included additional disclosure in relation to various other points, sometimes in the form of standalone, additional sections. The below is a list, in no particular order, of sections that we have seen in at least one precedent:

- the type (public or private) of blockchain platform used for the issuance of the DLT-based debt instruments and certain key information in relation to the functioning of such platforms;<sup>3</sup>
- the role that key intermediaries play (eg operator of the blockchain platform, custodian, registrar etc), including in relation to KYC/AML and sanctions checks;<sup>4</sup>
- the process and mechanism for transferring the debt instruments (in addition to what is described in the Terms and Conditions of the debt instruments);<sup>5</sup>
- any business continuity plan(s);<sup>6</sup> and
- the environmental impact (if any) of the underlying DLT.<sup>7</sup>

In addition, although not strictly disclosure points, we noted that in at least one precedent there were also the following sections:

- limitations on, or assignments of liability/responsibility by, the issuer in relation to certain sections of the offering document, in particular when such sections are prepared on the basis of information provided by third parties (eg in relation to the blockchain platform being used);<sup>8</sup> and
- deemed representations and warranties from investors, which in some cases relate to the acquirers of the DLT-based debt securities having a sufficient understanding of DLT and smart contracts to make an informed investment decision.<sup>9</sup>

Importantly, the review showed that there is no universal approach to the above topics. The only point that featured in all precedents was a confirmation and description of the type (public or private) of DLT infrastructure used.

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<sup>3</sup> This was the sole disclosure point that was universal in the offering documents that we reviewed.

<sup>4</sup> This paper does not go into any detail in relation to KYC/AML/anti-bribery and sanctions considerations which is a separate topic and a commercial discussion. There are certain additional risks to be managed when DLT-based debt instruments are issued onto public blockchains (due to the pseudonymity of transferees) which may need to be disclosed in risk factors, although we are aware that in practice there are various solutions available to manage these concerns and negate any risks, such as the implementation of whitelists for investor on-boarding. There may also be more focus on KYC/AML/anti-bribery and sanctions on a non-intermediated deal where regulated financial institutions are not involved in the processes of issuance and transfer. Again, a risk factor may be necessary in such a configuration to address any concerns, to the extent not mitigated by the implementation of solutions such as whitelists.

<sup>5</sup> This point was seen in a number of the offering documents that we reviewed.

<sup>6</sup> Included in the Guidelines for DLT Financial Instruments in relation to the registration of the debt securities on the Securities Official List (the “SOL”) of the Luxembourg Stock Exchange (the “LuxSE”).

<sup>7</sup> Ibid.

<sup>8</sup> The division of responsibility was commonly addressed in the offering documents reviewed.

<sup>9</sup> So far this has been a point specific to certain issuers.

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## Additional points for consideration

There are various elements that will likely impact the extent to which the risk factors and other disclosure mentioned above would be considered for inclusion in an offering document for a DLT-based debt instrument issuance:

### a) Type of DLT infrastructure

Whether the DLT-based debt instruments are being issued using a public blockchain or private DLT network (which may or may not be part of a securities settlement system) has an impact on the type of risks for investors as well as on various operational aspects which might need to be reflected in offering document disclosure. For example, forking is a risk only on public blockchains and there is a third-party platform operator only in the context of private DLT networks. In addition, certain public blockchain consensus mechanisms such as Proof of Work lead to significantly higher energy consumption than other consensus mechanisms such as Proof of Stake and Proof of Authority.

For the avoidance of doubt, it is important to draw a clear distinction between securities that involve the use of DLT (whether public or private) and crypto-assets not deemed to be securities. Accordingly, where the relevant DLT-based debt instrument is issued on a public blockchain, this distinction ought to be considered in relevant disclosure requirements.<sup>10</sup>

### b) Purpose and nature of the transaction

Whilst some of the advantages of DLT-based debt instruments are common to all transactions, such as dematerialisation and automation, we are still in the innovation phase where different structures and ideas are being tested. In particular, the cash leg of transactions has sometimes been carried out off-chain and sometimes on-chain using cash tokens (including central bank digital currency tokens). The number of intermediaries also depends on the type of transaction, although any decision relating to the choice of intermediaries is not necessarily related to the choice of technology. Issuers may choose to raise debt by auction or private placements in a non-syndicated manner.

It may be that certain innovations or structural features merit specific disclosure to assist investors in their assessments of the merit/risk of investing in the debt securities, and the structural differences between early transactions may be a reason for caution when trying to identify common themes across precedents.

### c) Type of issuer

As is current market practice for any debt instrument, the nature of the issuer and its creditworthiness is relevant to any discussions with regards to offering document disclosure. Sovereign and quasi-sovereign issuers are often exempt from legal and regulatory disclosure requirements that might be imposed upon other categories of issuers from the private sector, such as global financial institutions and corporates. They also face different reputational risks which might impact the disclosure that features in their offering documents.

### d) Listing considerations

Local laws and regulations in relation to offering document disclosure are also relevant. For example, in Europe, if debt securities are to be admitted to trading on an EEA or UK regulated market, then the disclosure requirements set out in the Prospectus Regulation or the UK Prospectus Regulation<sup>11</sup>, as the case may be, would apply<sup>12</sup>. At present, in Europe, the majority<sup>13</sup> of DLT-based debt instruments have not been admitted to trading on a regulated market, mainly due to “CSDR”<sup>14</sup>. Article 3(2) of CSDR, amongst other provisions, provides that where a transaction in transferable securities

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<sup>10</sup> For example, the EU's Markets in Crypto-Assets Regulation (MiCAR), and other relevant legislation such as La Loi Pacte in France, have deliberately defined crypto-assets and digital assets in such a way that financial instruments are not caught by such legislation, in part due to the different characteristics and risk profile they incorporate.

<sup>11</sup> Regulation (EU) 2017/1129 of the European Parliament and of the Council on the prospectus to be published when securities are offered to the public or admitted to trading on a regulated market or, in the UK, as Regulation (EU) 2017/1129 forms part of the laws of the UK.

<sup>12</sup> For example, article 16 of the Prospectus Regulation/UK Prospectus Regulation and the ESMA Guidelines on Risk Factors set out key requirements on risk factors.

<sup>13</sup> The most notable exception is the issuance by the International Bank for Reconstruction and Development in October 2023 (listed in the table above).

<sup>14</sup> Regulation (EU) No 909/2014 of the European Parliament and of the Council on improving securities settlement in the European Union and on central securities depositories.



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takes place on a trading venue, the relevant securities shall be recorded in book-entry form in a central securities depository (as defined in CSDR).

In addition, certain listing venues impose disclosure requirements upon issuers. For example, in order to list debt instruments on the Securities Official List (SOL) of the Luxembourg Stock Exchange, issuers must adhere to a series of disclosure requirements specific to the relevant issuer.<sup>15</sup>

### e) Targeted investors

Investors in certain jurisdictions or certain categories of investors may require more detailed disclosure and risk factors in relation to the use of DLT, particularly given its technical and complex nature. For example, retail investors are often protected by legislation or regulation establishing higher standards for retail sales and disclosure relating thereto, as well as local consumer protection rules.

### f) Choice of governing law

The governing law of the DLT-based debt instruments might also have an impact on certain offering document disclosure points. The governing law can impact the form of the notes and the nature and responsibilities of the key intermediaries in the lifecycle of the DLT-based debt instruments. For example:

- in France, only registered bonds can be issued through distributed ledgers (outside of the context of the EU DLT Pilot Regime), despite such form of bonds being rarely used for benchmark issuances in France; and
- investors may have to consider different roles, such as central account keeper<sup>16</sup> under Luxembourg law, registrar under French law, crypto securities registrar under German law, and tokenisation registrar under Hong Kong law.

There are various reasons that an issuer might choose a particular governing law for its bonds: location of its registered office, location of its investors, level of experience/expertise of the relevant courts, governing law of its other financial instruments etc.

In the context of DLT-based debt instruments, the legal certainty offered by certain jurisdictions has been an additional consideration which has been taken into account in early issuances of DLT-based debt instruments, including those listed in the table in the section “*Review of DLT bond offering documents*” above. Where the governing law chosen by an issuer is perceived to have less legal certainty in relation to the issuance of DLT-based debt instruments, the parties may want to consider if a risk factor in relation to potential uncertainty as to the legal, valid and binding nature of the securities is warranted. In addition, flexibility of the legal system to apply with clarity to new and developing technologies might also be relevant.

### g) Regulatory sandboxes

Any transaction carried out in the context of regulatory sandboxes, such as those established by the EU’s “DLT Pilot Regime”<sup>17</sup> or the UK’s “Digital Securities Sandbox”<sup>18</sup>, would require further consideration. For example, such transactions may be subject to the disclosure rules set out under the Prospectus Regulation or the UK Prospectus Regulation (as the case may be). There may also be merit in including information (potentially in the form of an additional section or additional risk factor(s)) on the relevant regulatory sandbox and/or the relevant market infrastructure(s) which has or have been authorised under such regulatory sandbox<sup>19</sup>.

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<sup>15</sup> Note that the SOL allows for the listing, but not admission to trading, of debt securities.

<sup>16</sup> The “central account keeper” construct does not feature in the relevant French laws relating to the use of DLT in the context of the issuance, custody and transfer of debt securities.

<sup>17</sup> Regulation (EU) 2022/858 of the European Parliament and of the Council on a pilot regime for market infrastructures based on distributed ledger technology

<sup>18</sup> Yet to be finalized/passed into law.

<sup>19</sup> For example, in the context of the EU DLT Pilot Regime, indicating the basis upon which the relevant DLT market infrastructure has obtained an authorisation to operate under the sandbox regime and the specific exemptions to the applicable EU financial services legislation granted by the national competent authority.

# Conclusion

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The review has enabled us to identify and compare the different approaches that market actors have adopted when preparing offering documents for DLT-based debt instruments. One clear area of convergence is that additional risk factors have been included to address risks for investors relating to the use of DLT, the legal and regulatory environment for DLT-based debt instruments and the limited liquidity for such debt instruments. The number and scope of such risk factors will largely depend on the structure of the transaction (particularly the type of DLT network or blockchain) and the other considerations detailed above in “*Additional points for consideration*”, which should not be seen as an exhaustive list.

The perceived complexity of DLT, and the lack of familiarity that investors may have with its impact on primary issuance, the secondary market and custody, may justify the inclusion of additional disclosure sections that are mentioned in this paper, but it would not be appropriate to draw firm conclusions or make recommendations from the review on these points at such a nascent stage in the development of this sector.

It will continue to be necessary to take a “case-by-case” approach to risk factors and other disclosure in each transaction as this is an innovative area where certain structures provide more complexity than others. In addition, the ecosystem continues to evolve, potentially leading to greater interdependency with different technological infrastructures and potentially providing different options for the settlement of the cash leg<sup>20</sup>. Transaction parties will therefore need to carefully consider how to address such points in offering documents, the extent to which risk factors will need to be adapted, and whether other disclosure needs to be modified or added.

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<sup>20</sup> For example, wholesale central bank digital currency (eg experiments conducted by Banque de France, see details [here](#), or the [announcement](#) by Swiss National Bank to launch a wholesale CBDC in Swiss francs in [Project Helvetia Phase III](#)), or in the absence thereof, connectivity options to existing settlement systems in central bank money (eg “trigger solutions” tested by Bundesbank, see details [here](#), or the Bank of Italy, see details [here](#)), deposit tokens, or regulated stablecoins.

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