



# Hong Kong's tokenised green bonds



by **Georgina Lok**

## **S** Technology driving transformation in capital markets

**F** Accelerating technological innovation over the past decade has sparked new opportunities to transform and rethink financial market structure and processes. In particular, the use of distributed ledger technology (DLT) has garnered notable use cases in traditional capital market products and processes, such as bond issuance, investment and trading.

**A** ICMA estimated that, as of 2023, there were globally more than 40 technology solutions available to automate all or part of the debt security issuance process, and over 30 outstanding bonds that have digital exposures (ie issuance on a digital ledger, digital exchange, and/or digital clearing house).<sup>1</sup> Related tools enhancing market efficiency and interoperability are also emerging. For example, ICMA's Bond Data Taxonomy (BDT), which was released by ICMA in 2023, aims to provide an agreed language for key bond information to promote automation and reduce the risk of fragmentation across the issuance process.

For Hong Kong as an international financial centre and a major bond hub, there is merit in embracing innovation and adopting technologies that hold the potential to generate efficiency gains, reduce cost, enhance transparency and facilitate investor participation in the bond market. This potential is what prompted the HKMA to embark on a tokenisation journey in 2021 with [Project Genesis](#) in collaboration with the Bank for International Settlements Innovation Hub Hong Kong Centre, which successfully concept-tested the issuance of tokenised green bonds in Hong Kong. Building on Project Genesis, we took the initiative beyond proof-of-concept to actual, real-money transactions, and have successfully executed two tokenised green bond issuances for the HKSAR Government since 2023.

## **World's first tokenised government green bond**

The HKSAR Government's [first tokenised issuance](#) (HKD denominated, around US\$100 million equivalent) was launched in February 2023, marking the world's first tokenised government green bond. Governed by Hong Kong law and implemented under the prevailing legal and regulatory framework, the offering was highly significant as it demonstrated that Hong Kong could provide a flexible and conducive environment for the tokenised issuance format.

The issuance also showed the possibility to run a bond's lifecycle on-chain, bringing together multiple parties (issuer, underwriting banks, custodians, agents, etc) that would otherwise be interacting via different systems onto a single platform with a common set of records. For example, atomic settlement in primary issuance was enabled by on-chain delivery-versus-payment exchange of securities tokens and cash tokens, with the settlement cycle shortened from the typical five business days (T+5) to one business day (T+1). DLT was applied not only in primary issuance, but also the full suite of post-issuance processes, with settlement of secondary trading, coupon payments and maturity redemption all taking place on the digital assets platform.

## **Second tokenised green bond with broad investor reach and scalability**

Building on the success of the inaugural issuance, we conducted a [second tokenised issuance](#) in February 2024 in four major currencies (HKD, RMB, USD and EUR) totalling around US\$750 million equivalent. As the first multi-currency digital bond offering in the world, and with the aggregate size matching the benchmark sizes of many traditional issuances, this issuance brought tokenised bonds further beyond proof-of-concept and represented a big step

1. For more details, see the ICMA report, [The Asian International Bond Markets: Development and Trends, March 2024](#).



towards achieving wider market adoption and scalability. It attracted subscription by a broad spectrum of institutional investors globally, from financial institutions (including asset managers, banks, insurance companies and private banks) to non-financial institutions.

Central to the success of this second issuance was a groundbreaking investor access model that helped overcome participation hurdles in typical tokenised bonds. Investors had the option to access the bond via traditional market infrastructure (ie Hong Kong's central securities depository for debt securities, the Central Moneymarket Unit, and its existing linkages with Euroclear and Clearstream), thereby allowing participation via largely business-as-usual processes without directly interacting with the digital assets platform. This option alleviated investors from the potential complexity and costs in the technological and operational set-up associated with directly accessing the platform. In turn, the second issuance was able to have a broader investor reach and enhanced liquidity and could potentially help contribute to increasing interoperability across digital asset platforms and traditional central securities depositories going forward.

Also conducive to fostering interoperability was the use of machine-readable language in applicable legal documents and platform data fields, through [adopting ICMA's BDT](#), which is a set of standardised and machine-readable language for a bond's key economic terms (eg amounts, currency, maturity, interest etc), key dates (eg pricing, settlement, etc) and other relevant information (eg governing law, parties, ratings etc). If adopted more widely across the market, this could facilitate the exchange of information across parties, systems and platforms and pave the way for automation and straight-through-processing of capital market processes.

The second issuance has also unlocked a number of important features in bond digitalisation. For example, the bond was for the first time issued in a digitally native format, without having to first issue in traditional central securities depositories and subsequently converting it into digital format, thereby streamlining the issuance process. In addition, the issuance offered investors with enhanced transparency and on-chain accessibility of key green bond documentation – the issuer's Green Bond Framework and the relevant third-party review reports were viewable directly on the digital assets platform.

### Promoting wider adoption and unlocking further potential

The two tokenised issuances laid a solid foundation in promoting the adoption and realisation of the full potential of DLT in bond markets. The HKMA released a [report](#) last year to share our experience and set out the options and considerations of a tokenised issuance from technology, deal structuring and legal and regulatory perspectives, with a view to providing a blueprint for future similar issuances. We hope our efforts can create demonstration effect and prompt market participants to consider putting in place the relevant technological and operational capabilities to embrace the potentially game-changing technology.

Of course, there is still a long way to go. While various digital platforms and solutions are being developed and made available to the market, adoption will hinge on compatibility with existing market processes and systems, as well as the readiness of relevant stakeholders on technical, operational and legal fronts. This will inevitably take time. We will continue to seek feedback and ideas from the industry and collaborate closely with market players to further unlock the potential of DLT in capital markets.

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