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Hong Kong Advances Wholesale, Retail CBDC Projects

The Hong Kong Monetary Authority (HKMA) has launched a new wholesale central bank digital currency (wCBDC) pilot to support the development of the tokenisation market as part of its broader digital currency push.

Under the pilot, Project Ensemble, the HKMA will create a CBDC sandbox later this year to research and test use cases for financial market infrastructure (FMI) that will facilitate seamless interbank settlement of tokenised money through a wholesale CBDC.

The project will initially focus on tokenised deposits issued by commercial banks and made available to the public.

It will explore potential use cases including the settlement of tokenised real-world assets such as green bonds, carbon credits, aircraft, electric vehicle charging stations, electronic bills of lading and treasury management, as well as the potential for new financial infrastructure that bridges the gap between tokenised real-world assets and money in transactions.

Project Ensemble will build on experiments with tokenised deposit use cases that the HKMA conducted with HSBC, Hang Seng Bank and Ant Group last year, and invite other central banks and organisations to join future trials in the sandbox.

If the sandbox attracts sufficient interest from the industry, the HKMA will conduct a live issuance of the CBDC “at the appropriate time”.

Digital asset services provider HashKey is among the participants, helping to develop an interoperable technical framework and design solutions for tokenised asset issuance and management.

"The project has tremendous potential to drive efficiencies and financial inclusion, which aligns perfectly with HashKey's mission of making digital assets massively accessible," said Zhang Dayong, HashKey’s chief commercial officer (CCO).

"Wholesale CBDCs offer financial institutions access to a digital form of central bank money, making central bank money programmable to support automation and mitigate risks. This fundamentally improves the efficiency and speed of interbank and cross-border settlements, reducing settlement times and complexity, and enhancing the interaction between fiat currencies and digital assets."

Hang Seng Bank confirmed its participation, having completed the pilot for tokenised deposits and programmable payments and had three use cases selected by the HKMA in its retail CBDC pilot programme.

“We are delighted to work with HKMA on the wCBDC project, laying the groundwork for a robust digital asset ecosystem in Hong Kong. Leveraging our extensive experience in CBDC projects, we are driving the creation of tokenisation standards to position Hong Kong as a top global digital asset hub,” said Diana Cesar, Hang Seng Bank’s executive director and CEO.

To help set industry standards as part of Project Ensemble, the HKMA will form a wholesale CBDC Architecture Community of local and multinational banks, digital asset industry participants, technology companies and the CBDC Expert Group.

The HKMA stated it will also continue working with Cyberport and Hong Kong Science and Technology Parks to support the development of asset tokenisation and fintech innovation.

Hong Kong launched the world’s first tokenised government green bond last year and recently completed a second offering in four major currencies totalling HK$6bn, making it the first multi-currency digital green bond.

“The issuance size and wider investor participation, particularly in the second issuance, show that the technology is really moving beyond concept testing into actual production,” HKMA chief executive Eddie Yue said in a speech last week, adding that when it comes to use cases such as tokenised deposits, “market-wide adoption will take time, but we are making progress”.

The central bank has been exploring CBDCs since 2017, when it launched Project Lion Rock to consider the potential uses of a wholesale CBDC in high-value interbank payments.

Based on that research and its Fintech 2025 Strategy, the HKMA launched Project e-HKD in 2021 to explore the technicalities and commercial viability of launching a retail CBDC.

The central bank has conducted two rounds of market consultations on the potential issuance of a retail e-HKD and stated in an October 2023 report that a retail CBDC could add "unique value", but it has yet to decide whether to formally introduce the digital Hong Kong dollar.

The report outlined six potential use cases for the e-HKD including tokenisation:

- Full-fledged payments.

- Programmable payments.

- Offline payments.

- Tokenised deposits.

- Settlements of Web3 transactions.

- Settlement of tokenised assets.

Project Ensemble is part of the HKMA's broader portfolio of initiatives to facilitate the development of the tokenisation market. This includes work with the Bank for International Settlements (BIS) on Project Dynamo, which focuses on small and medium enterprises (SMEs); Project Genesis focusing on green bonds; and Project mBridge for wholesale cross-border payments.

The mBridge project is a collaboration between the central banks of mainland China, Thailand and the United Arab Emirates (UAE), under the BIS Innovation Hub to use CBDCs to reduce the cost and time of cross-border settlement.

The project is looking to launch a minimum viable product (MVP) "shortly", Yue stated, with a view to gradual commercialisation.

HKMA explores CBDC privacy concerns

In addition, the HKMA is collaborating with the BIS Innovation Hub Hong Kong Centre on the launch of the second phase of Project Aurum, which is exploring how to enhance privacy for retail CBDCs.

The first phase focused on testing the feasibility of a technology stack that integrates a wholesale interbank system and a retail e-wallet.

Consultations around the world indicate that balancing privacy and transparency is one of the primary concerns among the public about retail CBDC adoption.

The second phase of Aurum "seeks to advance the practical understanding of central banks around privacy when designing their CBDC systems and demonstrate to the public sector how technology can protect personal data in the CBDC space", the BIS stated.

"The project will focus on privacy by design as a principle and will explore the relevance of several privacy-enhancing technologies, including pseudonymization and zero knowledge proof. It will also test how increasing privacy affects the performance and compliance of a system."

If the HKMA does opt to proceed with the implementation of the e-HKD, it could potentially face legal challenges, according to Gordon Ng, a partner at law firm Dentons Hong Kong.

"First, from the anti-money laundering perspective, there is a delicate balance to strike between privacy and traceability. Some propose that full anonymity should be allowed for low-value transactions and traceability should be enforced for high-value transactions. Others argue that the line to draw between low and high value is blurry."

A digital version of the Hong Kong dollar could also have "questionable legal status" internationally.

"Even if the Hong Kong government were to accord full legal status to e-HKD, it is difficult to envisage its worldwide acceptability. In particular, for commercial transactions, where parties have the flexibility and freedom to determine for themselves the terms upon which they will transact, this includes the means of payment that they accept."

Even if Hong Kong introduces legislation to regulate the e-HKD, that may not be sufficient to compel contracting parties to accept it as payment or prohibit them from contractually refusing it.

“Generally, currency that is legally issued in a jurisdiction (including e-HKD in this case) should be recognised as a legal currency in other jurisdictions. However, the data protection laws and governing law may differ markedly between jurisdictions and, as such, it is difficult to ascertain the interoperability of e-HKD across the globe,” Ng stated.

Although the adoption of CBDCs for international trade remains in question, Hong Kong’s projects could provide insights for other countries and regions that are also actively exploring applications for central bank money and tokenised deposits.

“An e-HKD may not necessarily solve certain non-technical factors such as ingrained business norms and preferences, which can influence e-HKD’s uptake should it be issued,” according to consultants at Oliver Wyman.

“The pilot nonetheless proves that e-HKD could potentially deliver other substantial and equally important benefits to individuals, merchants, and government organisations.”

This would “provide some reference for other advanced economies currently exploring the implementation of retail CBDCs”.

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