



مصرف الإمارات العربية المتحدة المركزي
CENTRAL BANK OF THE U.A.E.

Digital Dirham -

A Primer on the
UAE's Central Bank
Digital Currency

Policy Paper No. 1/2025

July 2025

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Executive Summary

The Central Bank of the UAE (CBUAE) will soon be launching the UAE's central bank digital currency (CBDC) – the "Digital Dirham" in all formats (wholesale and retail)¹ – in response to the evolving needs of a digital economy while also future-proofing central bank money for the digital era. The Digital Dirham will serve as a digital version of the UAE's national currency, enabling instant settlements and widespread accessibility with the security and trust of traditional central bank-backed money.

The Digital Dirham is a core element of the CBUAE's multi-year Financial Infrastructure Transformation (FIT) programme, which aims at modernising the UAE's payment system and monetary framework. The CBUAE has explored the possibility of issuing a CBDC since 2019, recognising that the use of alternative forms of money could marginalise access to central bank money, and, thereby, impede the ability of central banks to meet their policy mandates. In January 2024, the first Digital Dirham as legal tender was issued on the issuance platform, when His Highness Sheikh Mansour bin Zayed Al Nahyan, Chairman of the CBUAE, initiated the first cross-border payment on the mBridge minimum viable product (MVP) using the Digital Dirham. Project mBridge was collaboration between the BIS Innovation Hub, the Bank of Thailand, Hong Kong Monetary Authority, the Digital Currency Institute of the People's Bank of China and the CBUAE. During the same time, the CBUAE also carried out a real-value retail pilot to evaluate the future design, technology and advantages of the Digital Dirham and developed four digital economy use cases to assess the feasibility and effectiveness of the Digital Dirham as an innovative universal payment method, which – in its planned configuration – can open up new business models and spur financial innovation through flexible interoperability, accessibility, and programmability.

The CBUAE will introduce the Digital Dirham in phases, with key design features aimed at mitigating risks while enabling innovation, including an intermediated two-tier distribution model and wallet-based access. The Digital Dirham at launch will be a non-interest bearing CBDC to encourage the primary use as a means of payment (rather than a substitute for savings) and will be fully fungible with other forms of the Dirham (cash, deposits). A cautious, flexible and collaborative approach aims to maximise the Digital Dirham's success based on effective use cases for retail, wholesale, and cross-border transactions.

This report summarises the key policy and design factors that informed the development of the Digital Dirham as secure, trusted and convenient form of money. It also provides an update on the current progress and preparatory steps before the full roll out to the general public, business, and government entities in the near future. A detailed analysis of the relevant policy issues and the CBUAE's impact analysis of introducing the Digital Dirham can be found in a working paper ("Digital Dirham: Selected Issues and Policy Considerations" [https://centralbank.ae/media/qw1ex32h/cbdc-long-report_july.pdf])

1. The CBUAE has completed the development of the Digital Dirham issuance platform and the deployment of the mBridge minimum viable product (MVP). The issuance platform was built using distributed ledger technology (DLT), which enables the minting, redemption and distribution of the Digital Dirham to licensed financial institutions (LFIs). mBridge is a multi-CBDC platform for wholesale cross-border payments. This was a result of Project mBridge, a collaboration between the BIS Innovation Hub, the Bank of Thailand, Hong Kong Monetary Authority, the Digital Currency Institute of the People's Bank of China and the CBUAE, which has now reached graduation stage.

الدرهم الرقمي: تمهيد حول العملة الرقمية لمصرف الإمارات العربية المتحدة المركزي

موجز تنفيذي

يسعى مصرف الإمارات العربية المتحدة المركزي ("المصرف المركزي") لمواكبة الاحتياجات المتغيرة للاقتصاد الرقمي وضمان مواكبة أموال المصرف المركزي لمتطلبات العصر الرقمي. ولتحقيق هذا الهدف سيطلق المصرف المركزي قريباً عملته الرقمية "الدرهم الرقمي"، بجميع أشكاله (للجملة وللجزئة)¹. سيكون الدرهم الرقمي نسخة رقمية من العملة الوطنية لدولة الإمارات، مما يتيح إجراء تسويات فورية واستخدامها على نطاق واسع، مع الحفاظ على خاصية الأمان والثقة التي تتمتع بها الأموال التقليدية المدعومة من المصرف المركزي.

يعد الدرهم الرقمي عنصراً أساسياً في برنامج *تحوّل البنية التحتية المالية* متعدد السنوات، والذي أطلقه المصرف المركزي بهدف تحديث نظام الدفع وإطار العمليات النقدية بدولة الإمارات. وفي هذا الصدد، بحث المصرف المركزي في إمكانية إصدار العملة الرقمية منذ سنة 2019، إدراكاً منه بأن من شأن استخدام أشكال بديلة من النقد أن يقلل من أهمية أموال المصرف المركزي، مما قد يعيق قدرة المصارف المركزية على تنفيذ مهامها المحددة في السياسات النقدية. وفي يناير 2024، تم إصدار أول درهم رقمي كعملة قانونية على منصة الإصدار، وذلك عندما قام سمو الشيخ منصور بن زايد آل نهيان، رئيس مجلس إدارة المصرف المركزي، بتنفيذ أول دفعة عبر الحدود على منتج الحد الأدنى القابل للتطبيق في منصة الجسر. ويمثل مشروع منصة الجسر أحد ثمار التعاون بين مركز الابتكار التابع لبنك التسويات الدولية، وبنك تايلاند، وسلطة النقد في هونغ كونغ، ومعهد العملات الرقمية التابع لبنك الشعب الصيني والمصرف المركزي. وفي الوقت ذاته، أجرى المصرف المركزي أيضاً تجربة فعلية ذات قيمة حقيقية على مستوى التجزئة لتقييم التصميم والتكنولوجيات المستخدمة والمزايا الخاصة بالدرهم الرقمي مستقبلاً، بالإضافة إلى تطوير أربع حالات استخدام للاقتصاد الرقمي بهدف دراسة جدوى استخدام الدرهم الرقمي ومدى فعاليته كوسيلة دفع شاملة ومبتكرة. كما يتمتع الدرهم الرقمي في شكله المخطط له بالقدرة على فتح آفاق جديدة لنماذج الأعمال وتعزيز الابتكار المالي من خلال التشغيل المتبادل بمرونة، وسهولة الاستخدام، وقابلية البرمجة.

سيقوم المصرف المركزي بطرح الدرهم الرقمي على مراحل، مع تضمين مزايا رئيسية في تصميمه تهدف إلى تقليل المخاطر والتمكّن من الابتكار، بما في ذلك نموذج توزيع مكوّن من مستويين وإمكانية وصول قائمة على المحفظة. وسيكون الدرهم الرقمي عند إطلاقه عبارة عن عملة رقمية غير محفلة بفائدة، وذلك لتشجيع استخدامه بشكل أساسي كوسيلة للدفع (دون أن يكون بديلاً للدخار). وسيكون قابلاً للاستبدال بالكامل مع أشكال الدرهم الأخرى (النقد، والودائع). يهدف اتباع نهج حذر ومرن وبشكل تعاوني إلى تحقيق أكبر قدر من النجاح للدرهم الرقمي استناداً إلى حالات الاستخدام الفعالة لمعاملات التجزئة والجملة والعبارة للحدود.

يلخّص هذا التقرير السياسات الرئيسية وعوامل التصميم التي ساهمت في تطوير الدرهم الرقمي كأحد أشكال النقد الآمنة والموثوقة والملائمة. كما يشتمل على آخر المستجدات حول التقدّم المحرر حالياً وخطوات إعداداته قبل طرحه بشكل كامل على الجمهور بشكل عام وشركات الأعمال والجهات الحكومية في المستقبل القريب. ويمكن الاطلاع على تحليل أكثر تفصيلاً لقضايا السياسة ذات الصلة وتحليل تأثير طرح الدرهم الرقمي، المعد من قبل المصرف المركزي، في وثيقة منفصلة عن هذا التقرير ("الدرهم الرقمي: القضايا المختارة والاعتبارات السياسية" https://centralbank.ae/media/qw1ex32h/cbdc-long-report_july.pdf).


¹ انتهى المصرف المركزي من تطوير منصة إصدار الدرهم الرقمي، وقام بنشر منتج الحد الأدنى القابل للتطبيق. تم إعداد منصة الإصدار باستخدام تقنية دفتر الأستاذ الموزع (DLT)، والتي من خلالها تُكوّن من سلك واسترداد قيمة وتوزيع الدرهم الرقمي على المؤسسات المالية المرخصة. منصة الجسر للعملات الرقمية المتعددة للبنوك المركزية هي منصة لمدفوعات الجملة عبر الحدود، وكانت نتيجة للتعاون بين مركز الابتكار التابع لبنك التسويات الدولية، وبنك تايلاند، وسلطة النقد في هونغ كونغ، ومعهد العملات الرقمية التابع لبنك الشعب الصيني والمصرف المركزي، ووصل المشروع حالياً لمراحله الأخيرة.

1. Introduction

Like many other central banks, the CBUAE has explored the possibility of issuing a CBDC as safe and programmable “digital version” of cash that can better cater to the requirements of an increasingly digital economy while upholding public confidence in the national currency.² The goal of the Digital Dirham is to foster innovation in the financial system by utilising the latest technology to improve payment system efficiency and effectiveness, promote access, usage and quality of financial services, and reinforce monetary policy execution. The Digital Dirham will provide an integrated and secure platform for retail, wholesale, and cross-border transactions, which effectively targets end-users and intermediary involvement through various use cases to encourage innovation and adoption.³

In 2023, the CBUAE initiated the development of the Digital Dirham as part of its multi-year Financial Infrastructure Transformation (FIT) programme.⁴ This initiative is part of a long-term strategy to modernise and adjust current payment systems and the monetary framework to meet the needs of a digital economy and enhance financial inclusion. During the first phase of implementation, the CBUAE has made substantial progress in designing, building, testing and deploying the Digital Dirham as a universal payment instrument for retail, wholesale and cross-border use. The CBUAE provisioned the core infrastructure for the Digital Dirham and can now issue, redeem and distribute the Digital Dirham to licensed financial institutions (LFIs) through a custom-built issuance platform utilising Distributed Ledger Technology (DLT). The CBUAE also successfully conducted a real-value retail pilot to evaluate the future design, technology and advantages of the Digital Dirham, which followed several successful proofs-of-concept (PoCs) and pilots by the CBUAE, such as “Project Aber” in 2019 with the Saudi Central Bank and the real-value cross-border CBDC pilot of Project mBridge in 2022.⁵

Figure 1. Key Benefits of the Digital Dirham

 Monetary Policy Improve resilience of the monetary regime through currency sovereignty and liquidity management	 Compliance Facilitate more secure AML/CFT- and KYC-compliant transactions and counter financial crime
 Financial Stability Ensure safety and smooth operations of the financial system	 Digitalisation and Innovation Accelerate the digital economy through new functionalities and features such as tokenisation and smart contracts
 Resilience and Competition Enhance national resilience through provision of robust CBDC infrastructure while increasing payments choice	 Efficiency Reduce costs, increase efficiency and address payment pain points, in turn boosting economic growth
 Global Outreach Strengthen international cooperation and trade by improving cross-border payments	 Financial Inclusion Serve unmet needs and promote financial inclusion by reducing barriers and increasing access

2. A total of 134 countries representing 98 percent of the global economy are now exploring digital versions of their currencies (Atlantic Council, 2024. Central Bank Digital Currency Tracker. September (Washington, D.C.: Atlantic Council)).
3. See Koonprasert, Tayo Tunyathon, Shiho Kanada, Natsuki Tsuda, and Edona Reshidi, 2024, “Central Bank Digital Currency Adoption: Inclusive Strategies for Intermediaries and Users,” FinTech Note, October (Washington, D.C.: International Monetary Fund).
4. CBUAE, 2023, “CBUAE Launches a Financial Infrastructure Transformation Programme to Accelerate the Digital Transformation of the Financial Services Sector,” Press Release, 12 February (Abu Dhabi: Central Bank of the UAE).
5. Project mBridge represents a multi-jurisdictional effort aimed at exploring the operationalisation of a multi-CBDC common platform for wholesale cross-border payments to address issues such as high costs, slow processing times, lack of transparency, and operational complexities. The project also prioritises maintaining currency sovereignty and ensuring monetary and financial stability for each participating jurisdiction, following the principles of “do no harm,” compliance, and interoperability. See also: Bank for International Settlements (BIS), 2023, “Project mBridge: Experimenting with a multi-CBDC Platform for Cross-border Payments,” BIS Innovation Hub (31 October); Bank for International Settlements (BIS), 2022, “Project mBridge: Connecting Economies through CBDC,” BIS Innovation Hub (26 October).

The adoption of the Digital Dirham offers a wide range of benefits as a secure, trusted and convenient form of money (Figure 1). It is expected to enhance the efficiency of the local payment system, safeguard the stability of the monetary system, enhance financial inclusion and promote greater international use of the Dirham. The Digital Dirham will simplify processes by reducing payment costs and enabling immediate settlement of retail, wholesale, and cross-border payments in central bank money. A widely accessible Digital Dirham could also expand access to financial services for unbanked or underbanked individuals, ensuring equitable distribution of digitalisation benefits and serving as a primary means for their remittance flows. Moreover, the Digital Dirham could help the UAE enhance its position as a regional financial centre by offering efficient clearing, settlement and innovative financial services as digital technologies progress. Additionally, it will support initiatives for combatting illicit financial activities.

In the coming years, the CBUAE will introduce various forms of the Digital Dirham in a phased approach. The CBUAE – in partnership with relevant government entities and industry stakeholders – will continue to advance preparations for the full launch of both the retail and wholesale versions of the Digital Dirham. Maintaining open communication with intermediaries and users, establishing clear guidelines, understanding their motivations, business models, and requirements will promote adoption. A gradual and controlled rollout will ensure that key policy principles and considerations are addressed at each stage of development; it also aligns with CBDC initiatives in other countries, fostering confidence in a secure and widespread introduction of the Digital Dirham. This approach allows for ongoing monitoring of technological advances in payment systems and CBDCs around the world, enabling the timely identification of emerging insights and lessons learned.

The remainder of this paper provides an overview of the key considerations that have informed the development of the Digital Dirham to this point. Detailed analysis and explanations can be found in the working paper (“Digital Dirham: Selected Issues and Policy Considerations”), which serves as background note to this report.

2. Policy Choices and Impact Analysis

The CBUAE has considered relevant risks and put in place necessary policies and measures to mitigate against unintended consequences of introducing the Digital Dirham. The impact of the Digital Dirham on the UAE's financial system varies, depending on how quickly and extensively it is implemented and based on core design and policy considerations. It can enhance the functioning of the UAE's financial system, mainly by improving payment system efficiency, enhancing monetary policy transmission, and enabling new digital economy applications. However, the Digital Dirham – like any other CBDC – could also present potential risks to financial and monetary stability as well as challenges related to privacy, cybersecurity, and illicit financing, which could outweigh its benefits. The CBUAE has completed a comprehensive analysis of key risks to assess the impact of fundamental design aspects of the Digital Dirham, which will help mitigate potential risks:

- **Financial stability.** A high adoption rate of the Digital Dirham could impact financial intermediation by displacing bank deposits. Also, as a new, rapidly accessible “safe haven” asset, the Digital Dirham could amplify potentially destabilising deposit pressure during times of stress. Therefore, from a policy perspective, the CBUAE will encourage the use of Digital Dirham primarily for payments (rather than a substitute for savings). Appropriate limits and non-remuneration are considered to ensure that the Digital Dirham is utilised mainly for transactional purposes. Holding limits would constrain deposit outflows in the periods of macro-financial stress. Under these conditions, results from CBUAE simulations suggest that the Digital Dirham could reach a share of 5% of M3 money supply, which is in line with estimates from similar studies in other countries. While the Digital Dirham could displace some bank deposits, structural excess reserves in the banking sector help mitigate the risk of disintermediation.
- **Monetary policy.** The introduction of the Digital Dirham will expand access to non-cash central bank money to the general public, which could impact monetary policy transmission channels if it influences saving and borrowing decisions; however, monetary stability remains unaffected as long as the (non-remunerated) Digital Dirham does not compete with banks for deposits. In fact, by increasing participation in the payment system and lowering cash handling costs, the Digital Dirham might enhance the effectiveness of monetary policy. Thus, the Digital Dirham should be fully interchangeable with cash and bank deposits at par value as well as reserves held by banks at the CBUAE to ensure consistency of central bank money, regardless of its form, while preserving currency stability. While the CBUAE's balance sheet will remain largely unchanged with the Digital Dirham's introduction, operational adjustments will be necessary for key operations such as liquidity forecasting and rules governing the CBUAE's liquidity facilities.⁶

6. See Kunaratkul, Tansaya, Andre Reslow, and Manmohan Singh, 2024, “Implications of Central Bank Digital Currency for Monetary Operations,” FinTech Note (Monetary and Capital Markets Department), October (Washington, D.C.: International Monetary Fund).






- **Financial inclusion and accessibility.** The Digital Dirham could inadvertently exclude individuals who lack access to digital infrastructure or the necessary technological literacy, thereby widening the gap between those who can participate in the digital economy and those who cannot. A widely accessible and accepted Digital Dirham can offer financial services for the unbanked and underbanked, as well as serve as a channel for remittances of a large expatriate workforce. Additionally, it should incorporate features that encourage widespread usage (without disintermediating banks), including supporting new use cases and innovative business models for both the end-user and intermediaries. Digital financial literacy programmes should be implemented to ensure the effective usage of the Digital Dirham. The Digital Dirham should serve as public good like cash and reduce the cost of payments for consumers and businesses alike.⁷
- **Privacy and financial crime.** Excessive privacy of the Digital Dirham could facilitate criminal behaviour, while excessive surveillance could lead to restrictive financial monitoring. Thus, the CBUAE will protect user privacy and user data with strong safeguards while ensuring adherence to anti-money laundering/combating the financing of terrorism (AML/CFT) and know-your-customer (KYC) requirements. User data will be held by LFI as wallet providers, and no personal identifiable information (PII) is stored on the ledger. Pseudonymity of users and encryption will further safeguard privacy. To prevent financial crime and support law enforcement, digital identity/ KYC protocols and payment traceability will facilitate suspicious transaction reporting in case of a reporting entity suspects a financial crime, such as money laundering or financing of terrorism.
- **Cyber-security and operational risk.** The Digital Dirham could face cyber threats, potentially undermining trust in the UAE's financial system and the CBUAE. The level of risk will not only hinge on the effectiveness of cyber security and cyber resilience measures but also depend on privacy governance (see above), such as Digital Dirham's digital identity framework. The Digital Dirham has been designed and tested to minimise cyber security risks while ensuring adequate privacy protections.

7. The low adoption of CBDCs in some jurisdictions suggests a possible risk of similar challenges with the Digital Dirham.

3. Design Choices and Risk Mitigation for the Digital Dirham

The Digital Dirham is at the forefront of CBDC development globally, boasting high security, reliability, flexibility, and scalability, with a view to encouraging effective adoption without disintermediating the banking sector. Its design and governance incorporates lessons learned from successful CBDC launches in other jurisdictions while also incorporating unique features not typically seen in other CBDCs, such as access for non-residents, offline availability, and cross-border payment capabilities. Similar to other jurisdictions with CBDCs, the Digital Dirham follows an intermediated distribution model with appropriate limits on CBDC holdings and transaction values. Figure 2 below provides a summary of the main design considerations.

Figure 2. Overview of Key Design Considerations for the Digital Dirham

	Operating Model Approach (token, account vs. combination); issuance (direct vs. indirect); architecture (two tier vs. one tier); interoperability (integration with existing payment systems, interoperability with other networks vs. separate)
	Design Features and Governance Monetary (reserve coverage, no interest and size limits); programmability (smart contracts); cross-border interoperability
	Technology Architecture (DLT v conventional systems), ledger (Blockchain vs. traditional database technology), blockchain permissioned vs. public)
	Legal Foundations Legal nature of CBDC (status as legal tender), Central Bank Law reform/amendment , legal recourse to private elements
	Project Implementation Organisation, staffing and design of pilot (incl. stress testing), communication
Network effects will depend on design features, legal framework, and regulation.	

Sources: Söderberg and others (2022) and authors.⁸ Note: DLT=distributed ledger technology; RTGS=real-time gross settlement system; attributes in bold font indicate the distinct policy choices the CBUAE has made regarding the issuance of the Digital Dirham in terms of operating model, design, governance, legal status and technological platform.

8. See Söderberg, Gabriel, Marianne Bechara, Wouter Bossu, Natasha Che, Sonja Davidovic, John Kiff, Inutu Lukonga, Tommaso Mancini-Griffoli, Tao Sun, and Akihiro Yoshinaga, 2022, "Behind the Scenes of Central Bank Digital Currency: Emerging Trends, Insights, and Policy Lessons," *FinTech Note* (Monetary and Capital Markets Department), February (Washington, D.C.: International Monetary Fund).

The Digital Dirham will be distributed using an intermediated CBDC model, with hybrid wallet-based access. As a digital alternative to physical cash and equivalent to reserves, the Digital Dirham represents a liability of the CBUAE. However, LFI manage its distribution by providing user wallets and managing customer payments. Digital Dirham wallet providers will include LFIs (banks, exchange houses, payment service providers) as well as FinTechs with SVF licences (store value facility). By involving the private sector in such an “intermediated model”, the CBUAE can focus on its core mandate of monetary and financial stability while delegating certain tasks to the private sector. The Digital Dirham will be based on a hybrid architecture that combines account- and token-based approaches. Users will have wallets with account identifiers with all transactions recorded on the permissioned distributed ledger. DLT will ensure immutability and strong privacy safeguards through pseudonymity, while also enabling integration with existing payment systems and new digital asset networks. Digital identification protocols for system access and payment traceability will deter the misuse of the Digital Dirham for illicit activities. The CBUAE leverages private sector expertise in areas such as KYC-AML verification and user interface development for the Digital Dirham, while maintaining control over critical functions like issuance and transaction validation using a private, permissioned DLT. This model helps mitigate disintermediation risks (including by setting appropriate limits) and encourages LFIs to innovate based on the capabilities of the Digital Dirham.

The Digital Dirham will be launched as an unremunerated, tiered CBDC with appropriate user limits. Providing positive remuneration could encourage adoption, enhance competition in the deposit market, and serve as an additional policy tool. Nevertheless, this strategy may not be in line with the Digital Dirham's primary purpose of being a payment method rather than a store of value or investment. If the advantages of offering remuneration are deemed to outweigh the disadvantages, this choice could be revisited at a later time. The wallets service and platform the CBUAE is developing will support and enforce holding and (potentially) transaction limits to avoid disruptive fluctuations in the Digital Dirham. These limits will be thoughtfully established and adjusted to ensure a seamless transition. Various levels of holding limits (“tiers”) will be set for local residents, businesses, and tourists/visitors. By linking Digital Dirham wallets to bank accounts, transactions that exceed pre-defined limits could still be processed by automatically drawing any excess debits from ordinary current accounts. This “reverse waterfall process” would allow users to also purchase large value goods and services using their Digital Dirham.

The Digital Dirham will be fully convertible with other forms of Dirham-denominated money.

Monetary stability requires that all forms of money, such as cash, bank deposits, and central bank reserves, are interchangeable and valued equally, including the Digital Dirham. LFIs’ own holdings of Digital Dirham can be used to meet reserve requirements and access the CBUAE’s Overnight Deposit Facility, which encourages LFIs to maintain a sufficient balance of Digital Dirham at all times. The CBUAE is also developing overnight and intraday lending facilities in Digital Dirham (as well as term lending facilities if needed) to provide liquidity support.

The CBUAE will develop bilateral and multilateral CBDC arrangements to facilitate cross-border payments and offshore holdings of the Digital Dirham. As part of the first phase of implementation of the Digital Dirham, the CBUAE demonstrated that multi-CBDC platforms can improve the efficiency of cross-border payments. Given the intensifying trade and capital flow connectivity between the UAE and other markets, especially in the MENA region, the cross-border application of the Digital Dirham is becoming increasingly attractive. Risks associated with the cross-border Digital Dirham can be effectively managed through technological solutions and access restrictions.

The issuance and distribution of the Digital Dirham requires a robust legal and regulatory framework. During the first phase of the Digital Dirham implementation, the CBUAE worked with several ministries to identify and make legal provisions to issue the Digital Dirham with full legal certainty. On 2 October 2023, the UAE enacted Federal Law No. 54 of 2023, amending Federal Law No. 14 of 2018 regarding the *Central Bank and the Regulation of Financial Institutions and Financial Activities* ("CBUAE Law"), expanding the definition of currency to include digital currency. Article 56 of the CBUAE Law, as amended, now states that "currency notes and digital currency issued by the Central Bank shall be legal tender for payment of any amount up to their full face value". The UAE legislature has also tasked the CBUAE's Board of Directors with managing technical aspects related to the issuance of CBDC. A detailed legal gap analysis was completed, including reviewing other laws, and providing recommendations as part of a comprehensive CBDC legal and regulatory framework. The CBUAE and relevant authorities will ensure full legal protection of the Digital Dirham at all times.

4. Current Status of Digital Dirham Development and Implementation

The CBUAE has now completed Phase I of implementing the Digital Dirham (Figure 3), which included all relevant workstreams across retail, wholesale and cross-border CBDC applications. In January 2024, His Highness Sheikh Mansour bin Zayed Al Nahyan, Chairman of the Board of the CBUAE, authorised the first issuance of the Digital Dirham as legal tender for completing the first cross-border CBDC payment on the mBridge minimum viable product (MVP) platform. During the same month, the CBUAE also conducted a retail pilot to evaluate the future design, technology and benefits of a retail CBDC. As part of the retail pilot in collaboration with several LFI, the CBUAE tested the CBDC lifecycle and four digital economy use cases to assess the feasibility and effectiveness of the Digital Dirham. These use cases included fractional ownership of tokenised assets, a smart tourist wallet, smart social benefit payments, and a parent/child sub-wallet. This demonstrated how the Digital Dirham can accelerate the evolution of the digital economy through its various functions and attributes, such as tokenisation, smart contracts, and programmability (Figure 4). For example, in the "smart social" use case, the Ministry of Community Development (MOCD) distributed food subsidies via programmable Digital Dirham. The MOCD could also programme where such Digital Dirham could be spent and monitor the distribution and usage of government benefits in real time. In addition, the CBUAE created a prototype Digital Dirham App, which allows test end-users to select their wallet provider, conduct payments, top up their accounts, acquire the Digital Dirham, redeem it, and carry out specified use cases (Figure 5).

Figure 3. CBUAE's Comprehensive Digital Dirham Project (Phase I)

Legal, Regulatory, Governance and Policy	Legal and Regulatory Review of existing legislation and regulations; amendments to allow for future launches, with full legal certainty; develop rulebooks for issuance platform and mBridge MVP	Analysis and Policies Monetary policy, financial stability and economic impact assessments/ simulation, feasibility studies and development of policy principles	Strategy and Governance Business and use cases design, benchmarking to other jurisdictions, business case/ financial planning, communications and roll-out strategy
Technical and Implementation	Issuance and Distribution Platform Automated issuance, redemption and transfer of CBDC, distribution channel for all future forms of CBDC, integrated with RTGS and nodes for the CBUAE and LFIs for ledger validation	mBridge MVP Development and soft launch of mBridge MVP with BIS Innovation Hub and several other jurisdictions	
Domestic POCs and Pilots	Domestic POCs and Pilots Domestic proofs of concept (POCs) and CBDC pilots: aid decision for potential full-scale roll-out (if warranted), including testing of future design, technology and use cases with industry and other stakeholders		
Duration	15 months (March 2023 – June 2024)		

Aside from completing the first issuance of the Digital Dirham and the retail CBDC pilot in early 2024, the CBUAE helped Project mBridge reach a minimum viable product (MVP) stage in collaboration with the Bank for International Settlements (BIS) and three other central banks. Project mBridge is now the world's first operational multi-CBDC platform, facilitating efficient, cost-effective, and instant cross-border payment and settlement in central bank money. After the CBUAE deployed the mBridge MVP platform and on-boarded UAE LFIs, the Digital Dirham can now be used for cross-border settlement and payment-versus-payment. The CBUAE will continue to assess the benefits and risks of Project mBridge, explore alternative bilateral and multilateral agreements, and ensure interoperability with other CBDCs to support cross-border payments while maintaining control and restrictions in the technical design of the Digital Dirham.

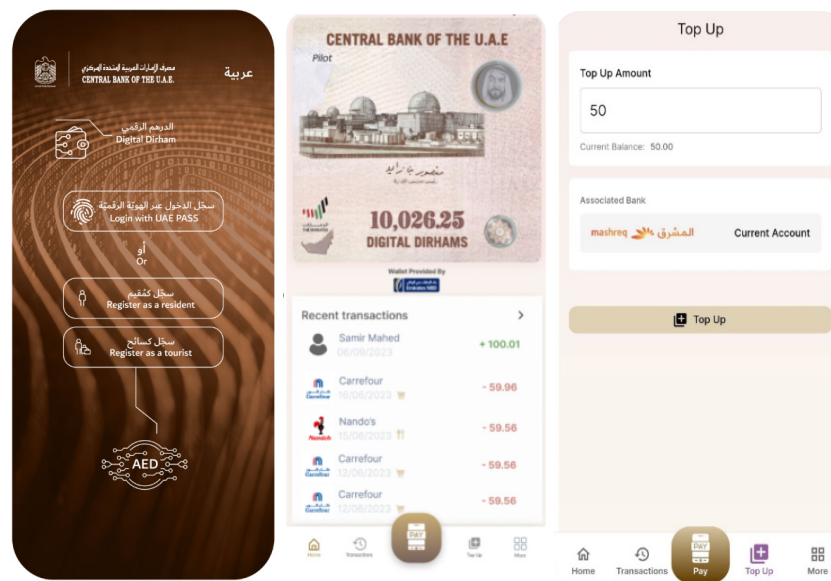
Figure 4. Overview of Digital Dirham Pilot Use Cases

1	Fractional Ownership Demonstrating the power of tokenisation and smart contracts, providing fractionalised ownership of assets for retail investors in real estate, with settlement in Digital Dirham
2	Smart Social Programmable government payments for effectively distributing social transfers with greater controls and transparency
3	Parent-child Sub-wallets Offering parents the ability to create sub-wallets for their children (for purposes of financial education), which can be combined with programmable spending rules and allowances using smart contract logic
4	Smart Tourist Boost spending from tourists (and increasing the attractiveness of the UAE as travel location) by means of non-resident wallets that offer gifted programmable money and instant VAT refunds as well as easy exchange to obtain and transact in Digital Dirham

In the coming years, the CBUAE will advance preparations for the full launch of both the retail, wholesale and cross-border versions of the Digital Dirham. As part of the second phase, the CBUAE is exploring developing other cross-border CBDC arrangements. The launch will be carried out in stages. A phased and controlled rollout aligns with CBDC initiatives in other countries, fostering confidence in the secure and widespread introduction of the Digital Dirham. This approach also allows for ongoing monitoring of global CBDC developments, enabling the identification of emerging insights and lessons learned.

Domestically, the CBUAE will be launching the Digital Dirham for retail and wholesale use, including fully implementing the four digital economy use cases. The retail Digital Dirham will also support peer-to-peer (P2P), online and in-store payments, business-to-consumer (B2C), business-to-business (B2B), and government-to-consumer (G2C) transactions, and other use cases enabled by programmability and CBDC. Stakeholder feedback regarding business value, consumer benefits, and potential for innovation has guided the selection of these use cases, with ongoing collaboration with government departments to integrate the Digital Dirham into the UAE's payment ecosystem.

Figure 5. Digital Dirham Prototype Application and Wallet



The Digital Dirham will be gradually introduced with a detailed implementation plan and policy guidance, developed by the CBUAE in collaboration with relevant government bodies. This phased rollout aligns with other countries launching CBDCs, ensuring secure adoption and building trust. Continuous monitoring of CBDC advancements allows for knowledge exchange among early adopters. To realise the full benefits of cross-border CBDC, the CBUAE will collaborate with other central banks, commercial banks (foreign and domestic), industry partners (such as exchange houses) and international bodies to ensure interoperability and connectivity.

5. Conclusion

The introduction of the Digital Dirham will improve resilience, efficiency, innovation, and access to financial services. Effective design and policies are crucial for successful adoption and risk mitigation. The CBUAE has carefully designed the Digital Dirham to support the UAE's digital transformation strategy, through adoption of emerging technology and enabling features such as programmability. The CBUAE will work with the financial ecosystem and stakeholders to ensure adoption through the implementation of high-priority use cases in a gradual roll-out. At the same time, the CBUAE will put in place controls and measures to ensure monetary and financial stability, protect against financial crime, reduce cybersecurity risks and promote financial inclusion and digital financial literacy.

By taking a precautionary and collaborative approach to implementation, the CBUAE is increasing the likelihood of the Digital Dirham achieving its full potential. The Digital Dirham was developed with a focus on ensuring that benefits outweigh potential risks, with ongoing reviews to further mitigate risks and ensure successful implementation. The CBUAE will continue to assess the impact of implementing the Digital Dirham and will adjust its design as needed.