



The UAE banking sector: Journey to achieving Dhs1 trillion of sustainable finance

Part II

Sectors primed for sustainable finance in the UAE

Sectors primed for sustainable finance in the UAE



In **Part I** of this report, we discussed the focused commitment of the UAE banking sector towards sustainable finance, underscored by the announcement of mobilising over Dhs 1 trillion by 2030.

Despite the heavy reliance on hydrocarbons in the global and UAE economies, sustainable finance offers a solution to fund the transition to a less hydrocarbon-dependent and lower-emission economy.

However, there are challenges within the banking sector and the wider ecosystem that need to be addressed to achieve this ambitious target. The first part of the report identified the obstacles and discussed pathways to overcome these challenges.

In this second part of the report we look at how the UAE's sustainability goals have necessitated significant investment across key economic sectors. As the country diversifies its economy beyond oil and gas, sustainable finance can play an important role in transitioning the key sectors towards greener inputs and operations.

UAE banks should continue to prioritise the sectors aligned with both national and global priorities. Channelling funding into sectors that are material to the economy and aligned with national priorities will ensure effective utilisation of sustainable finance in meeting the UAE's national sustainability and decarbonisation objectives.

Decarbonising this sector requires a comprehensive strategy encompassing technological advancements, policy interventions and financial investments.

The following seven sectors will play a key role in the UAE's economic transition to meet national sustainability targets:

Energy

The UAE aims to achieve net zero emissions by 2050 necessitating a significant shift towards renewable energy sources like solar, wind and clean hydrogen.

Funding will be required for large renewable power generation projects and driving R&D and innovation in energy technologies.



Built environment (infrastructure and real estate)

Driven by UAE's sustainable urban planning goals and in demand by conscious investors and consumers, sustainability is at the core of the country's real estate market.

Construction of green buildings, retrofitting of infrastructure and investments in new technologies are expected to drive demand for sustainable finance.



Sectors primed for sustainable finance in the UAE



Utilities

Reaching net zero in the power and water sector requires moving away from carbon-intensive sources of energy and relying on 'clean' sources of energy instead.

The transition to renewable sources of energy and improving efficiency across generation, transmission and distribution will demand funding.



Mobility and transport

The transportation sector, heavily reliant on internal combustion engines (ICE), is a significant contributor to global greenhouse gas emissions.

Decarbonising this sector requires a comprehensive strategy encompassing technological advancements, policy interventions and financial investments. This approach must focus on electrifying existing fleets and expanding public and private transportation options.



Industry

The industrial sector has been a major contributor to global greenhouse gas emissions, resource consumption and environmental degradation. Major high-emitting sub-sectors are cement and steel manufacturing, chemical industry and textile. Implementing energy management systems and upgrading to more efficient machinery and processes are a few of the key mitigating strategies that require investment.



Waste management

Organic waste decomposition and landfills are a major source of emissions. Additionally, generation of electricity used to run recycling and wastewater treatment plants is also a significant contributor to emissions. Funding clean power generation, retrofitting facilities and landfill measures are necessary to achieve decarbonisation targets.



Agriculture

Energy use on farms, manure management, enteric fermentation (animal digestion), and soil emissions due to fertiliser use are the primary drivers of these emissions. Decarbonisation will require investments in greening the power supply and efficient fertiliser usage.





The UAE's energy sector is leading the nation's ambitious Net Zero by 2050 strategy. This transformation focuses on expanding renewable energy - especially solar and wind power, and developing low-carbon technologies like hydrogen and nuclear energy. The UAE aims to triple its renewable energy in terms of total installed capacity, enhance energy efficiency, and implement smart grid technologies to achieve a sustainable and resilient energy system.

Key risks

Physical

- Higher temperatures will lead to increased energy demand, particularly for cooling, putting additional strain on the power grid. Sixty-five percent of energy demand is driven by cooling measures.
- Extreme weather events – including heat waves, storms and flooding – can damage energy infrastructure, leading to operational disruptions and increased maintenance costs.

Transition

- Policy and regulatory changes towards reducing carbon emissions and achieving net zero targets.
- Phase-out of fossil fuels will result in potential financial losses from stranded assets in fossil fuel-based generation.
- Shift towards renewable energies such as wind and solar necessitates significant investment and could impact existing fossil fuel-based infrastructure (stranded assets).

Direction for the future: Clean Energy and Renewables

- Increase renewable energy capacity through the expansion of solar and wind projects.
- Low-carbon hydrogen technologies, with plans to establish hydrogen production capacity and infrastructure. This includes both green and blue hydrogen production to support decarbonisation of various sectors.

Major ongoing sustainable projects and case studies⁵

Mohammed bin Rashid Al Maktoum

The Mohammed bin Rashid Al Maktoum Solar Park, covering 76 sq km. The solar park currently generates 1.63 GW and offsets roughly 1.4 million tonnes of CO₂ emissions every year, and its capacity will expand to 5 GW by 2030.



Abu Dhabi National Oil Company

The Abu Dhabi National Oil Company (ADNOC) also announced a \$3.1 billion investment to explore and implement carbon capture and storage technology in its operations, seeking to capture 5 million tonnes of CO₂ annually by 2030.



5 | ADNOC Allocates 15 Billion to Low-Carbon Solutions, ADNOC, (2023)

Real estate and the built environment



The built environment sector is a critical industry for achieving net zero emissions and accounts for 27% of the country's greenhouse gas emissions. A 56% reduction in emissions by 2030 has been set by the UAE Long Term Strategy, presenting substantial opportunities for banks to channel finance to this sector.

The UAE built environment sector emissions are primarily driven by water and electricity consumption, linked to building efficiency. To address this, the country is implementing comprehensive strategies that include decarbonising power and water generation, enhancing building codes, promoting energy-efficient cooling and heating systems, retrofitting existing inefficient buildings.

Key risks

Physical

- Rising temperatures and high heat stress increases the demand for power and cooling and raises energy consumption costs for buildings.
- Rising sea level pose a significant threat to infrastructure located in low-lying coastal areas.
- Frequent extreme weather events such as storms and heavy rains can damage buildings and infrastructure, leading to increased maintenance and repair costs.

Transition

- Stricter policy and regulatory requirements in the form of building codes and energy efficiency standards will require significant investments.
- Higher initial costs and investment required for green building construction and infrastructure.
- Low-carbon technology adoption and materials will require skilled labour.

Direction for the future: Clean energy and renewables

- Promotion of sustainable building materials to reduce embodied carbon.
- Efficient new buildings and retrofit of buildings by market and policy enablers (e.g. energy-related policies and building performance requirements).
- More access to green finance options such as green mortgages.
- Clean power and water generation for smart and more efficient cooling.

Major ongoing sustainable projects and case studies^{1,2}

UAE National Energy and Water DSM Programme 2050

The UAE National Energy and Water Demand Side Management Programme 2050 aims to reduce energy demand by 40% and water demand by 50% in the most consuming sectors of the country.



Estidama Programme: Integrating sustainable design into urban development

The Estidama Programme is an initiative developed by the Abu Dhabi Urban Planning Council to incorporate sustainable design principles into the city's urban development.



1 | National Water and Energy Demand Management Programme, UAE Government, (2024)

2 | Estidama Program, Department of Municipalities and Transport, (2024)



The UAE utilities sector plays a pivotal role in the country's development, providing essential services such as electricity and water to support its rapidly growing economy and population and has ambitious net zero targets for 2050. Key initiatives include expanding renewable energy capacity with significant investments in solar and nuclear power, and implementing low-carbon desalination technologies. The UAE aims to reduce the grid emission coefficient to 0 by 2050, while also achieving a 40% reduction in energy consumption and a 51% reduction in water consumption. These efforts are supported by the deployment of smart grid technologies, advanced metering and enhanced energy efficiency measures.

Key risks

Physical

- Extreme weather events such as high heat stress and increased precipitation can damage infrastructure or disrupt operations.
- Water scarcity affects the availability and reliability of water resources, impacting the water supply for domestic use and cooling water for power plants.
- Higher temperatures can decrease the efficiency of power generation and increase the demand for electricity, particularly for cooling.

Transition

- Regulatory restrictions affecting operations and costs.
- Access to financing increasingly becoming restricted for utility companies dependent on fossil fuels.
- Technological advancements with cheaper renewable sources of energy available.

Direction for the future: Renewable energy expansion

- Increase renewable energy capacity through solar power and investment in wind.
- Implementing energy efficiency measures and demand-side management programmes to reduce overall energy consumption. This includes retrofitting buildings and promoting energy-efficient appliances.
- Investing in smart grid technologies to enhance grid reliability, flexibility, and efficiency. Smart grids enable better integration of renewable energy, real-time monitoring, and improved load management.

Major ongoing sustainable projects and case studies^{3,4}

Large scale solar projects

Mohammed bin Rashid Al Maktoum Solar Park – this project, employing the Independent Power Producer (IPP) model, stands as the largest single-site solar park globally and aims to generate 5,000 MW by 2030.



Hydroelectric facility: Dam water storage capacity

Hydroelectric facility in Hatta – the 250MW station will generate electricity by making use of the water stored in Hatta Dam and have a storage capacity of 1,500 MWh.



3 | Mohammed bin Rashid Al Maktoum Solar Park, Government of Dubai, (2024)

4 | Hydroelectric Power Plant in Hatta, Dubai Electricity and Water Authority, (2024)

Mobility and transport



Mobility and transport sector emissions, primarily from internal combustion engine vehicles, will be addressed through the "avoid-shift-improve" methodology. This strategy includes reducing travel needs, shifting to sustainable transport modes, and improving vehicle efficiency with significant investments in rail infrastructure, electric and hydrogen vehicles, and public transport. These efforts aim to transform the transport landscape and reduce emissions by 56% by 2050, ensuring resilient, sustainable and future-ready urban environments.

Key risks

Physical

- Increasing frequency and severity of extreme weather events like storms, heavy rains and heat waves can disrupt transportation infrastructure and communication networks. This includes damage to roads, bridges, airports, and ports.

Transition

- New regulations could impact the transport sector, such as requirements for lower-emission vehicles and changes in fuel standards.

Direction for the future: The modal shift to less carbon-intensive travel

- Increasing use of efficient transport modes and incentivising the adoption of EVs.
- Rapid electrification of road vehicles whilst deepening the scale of sustainable public transportation (e.g. expanding rail infrastructure).
- Prioritisation of investment away from cars driven by the minority to transportation modes used by the majority.

Major ongoing sustainable projects and case studies^{6,7}

Decarbonising cities by improving public transport with cleaner vehicles

Dubai Taxi Corporation (DTC) has laid out an ambitious five-year plan spanning from 2023 to 2027, with a primary objective of transitioning its entire taxi fleet to fully environmentally friendly vehicles.



Sustainable aviation fuel and certification for net zero-emission flights

Etihad employs a fuel blend with 38% sustainable aviation fuel (SAF) and has achieved a net zero-emission flight, leveraging the 'book and claim' system verified by the Roundtable on Sustainable Biomaterials.



6 | The Estidama Program is an initiative developed by the Abu Dhabi Urban Planning Council to incorporate sustainable design principles into the city's urban development, Dubai Taxi Corporation, (2024)

7 | Test Flights, Etihad Airways, (2024)



Heavy industry was the leading source of GHG emissions in the UAE in 2019, with 103 million tonnes of carbon dioxide equivalent (MtCO₂e). Most emissions come from operations in oil and gas, refineries, petrochemicals, cement, iron and steel, and aluminium. These emissions are driven by manufacturing processes using conventional fuels, power and water. Achieving net zero in the UAE industrial sector requires overcoming three barriers: growing industrial output until 2050, the significant role of oil and gas in the GDP, and the high cost of decarbonising heavy-emitting sectors like aluminium, steel, and cement. Despite these challenges, the UAE is making strides towards decarbonisation, underscored by a commitment to reaching net zero by 2050.

Key risks

Physical

- Increases in the frequency and severity of storms and floods can cause delays and supply chain disruptions.
- Temperature increases lead to higher energy costs, lower productivity, and risks to employee health and safety.

Transition

- Policy and regulatory changes raising the costs of carbon-intensive manufacturing.
- Emerging legal risk due to high emission levels.

Direction for the future: Renewable energy and operational efficiencies

- Use of robotics to further streamline operational as well as energy efficiency.
- Major manufacturing hubs that cater to the demand for renewable energy to be developed.

Major ongoing sustainable projects and case studies⁸

Emirates Steel Company

Emirates Steel Company is using advanced technologies, clean energy sources and recycled waste within its production processes to reduce emissions and support the UAE Net Zero by 2050 strategic initiative.



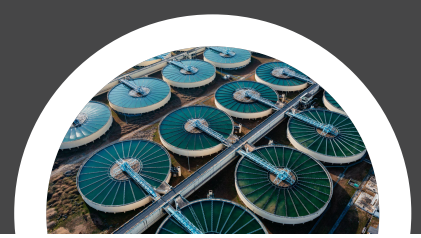
Emirates Global Aluminum

Emirates Global Aluminium is planning to build a recycling plant with an annual capacity of 150,000 tonnes, which is set to be the largest in the UAE. The factory will create a low-carbon, high-quality recycled aluminium billet.



8 | EGA plans to build its first aluminium recycling facility in the UAE, adding 150,000 tonnes billet capacity, Emirates Global Aluminium, (2022)

Waste management



The UAE's waste management strategy is a comprehensive approach aimed at achieving an 80% recycling rate by 2031 and significantly reducing landfill emissions. It focuses on enhancing recycling and waste diversion, expanding waste-to-energy projects, and capturing landfill gas for energy production. This strategy involves substantial investments in advanced technologies and infrastructure, retrofitting existing facilities, and implementing robust regulatory frameworks. By driving innovations in waste sorting, recycling, and energy conversion, the UAE aims to align its waste management practices with its Net Zero by 2050 commitment.

Key risks

Physical

- Increased temperatures can impact waste management infrastructure and affect landfill degradation rates.
- Frequent occurrences of heavy precipitation.

Transition

- Regulatory changes and behavioural shifts that maximise reuse, recycling and recovery over landfilling affect profitability and operations of traditional waste management companies
- Transitioning from traditional waste management practices to more sustainable methods could incur substantial costs for the sector. These include retrofitting existing facilities and investing in new technology.

Direction for the future: Innovative approach to waste management

- Innovations in waste sorting, recycling technologies and the development of a circular economy where waste materials are continuously reused.
- The adoption of waste-to-energy technologies is a crucial component of the UAE's waste management strategy. By converting waste into energy, the country can reduce landfill emissions and generate renewable energy.
- Innovations in composting, biogas production and materials recovery will be essential to meet sustainability targets and improve the overall environmental impact of waste management practices.

Major ongoing sustainable projects and case studies

Scaling up recycling infrastructure

Offering recycling for 15 different materials, the Averda pilot recycling station has increased the diversion from landfills. The project has been extended to 13 Averda-operated recycling centres across the UAE, helping boost rates of recycling among residents.



Pioneering digital waste management

BEEAH Tandeef has introduced several recycling innovations, including WastePro+, the region's first end-to-end digital waste management solution.





The agricultural sector in the UAE faces significant challenges, including food scarcity and growing demand for its products. The UAE's strategy to decarbonise agriculture focuses on several key initiatives: transitioning to clean power and water generation, which is expected to contribute to 82% of the sector's GHG reductions by 2050; optimising the use of chemical fertilisers through sustainable farming practices and efficient nitrogen fertilisers, projected to account for 2% of GHG reductions; and introducing dietary supplements for livestock to cut methane and nitrous oxide emissions, contributing another 14% of reductions.

Key risks

Physical

- Impact on crop yields due to higher temperatures and droughts.
- Soil degradation due to higher temperatures resulting in increased weeds and harmful insects that can affect some species of agricultural crops.
- Water scarcity and exacerbation of drought conditions impacting irrigation capacity.
- Soil salinity affects agriculture due to higher salt content in water, making it unfit for farming.

Transition

- Changes in policies and regulations around sustainable practices and availability of subsidies including carbon tax impacting the operating cost of carbon-intensive agriculture production.
- Adoption of new, less carbon-intensive technologies may pose financial and technical challenges for traditional farmers and ensure the availability of skilled labour to support this transition.

Direction for the future: Innovative and efficient farming practices

- Adoption of sustainable farming practices such as precision agriculture, vertical farming and hydroponics will optimise the use of resources like water and fertilisers, reduce waste, and increase crop yields, making agriculture more efficient and less dependent on arable land.
- The UAE plans to implement sustainable farming practices to reduce the application of synthetic fertilisers.
- Decarbonisation of power and water generation, switching to clean energy sources.

Major ongoing sustainable projects and case studies^{9,10}

Agri-tech R&D and production centres

The Abu Dhabi Investment Office (ADIO) has invested \$100 million in partnership with AeroFarms, Madar Farms, RNZ, and RDI to build agri-tech R&D facilities and production centres in Abu Dhabi.



Vertical farming and hydroponics facility

ECO 1, the world's largest vertical farm, is a hydroponics facility that can produce 900,000 kg of leafy greens annually. The farm uses 95% less water than field-grown produce. The UAE Government is focusing on technological solutions to improve water efficiency.



9 | Sector Updates: UAE Agtech Sector, US – UAE Business Council, (2021)

10 | Dubai: World's largest vertical farm opened, uses 95% less water, Khaleej Times, (2022)

Additional opportunities



As outlined in Part I, tangible steps are required by regulators and banks to help grow sustainable finance within the UAE. As organisations build internal capacity, develop innovative sustainable finance products and services, and engage with customers, they will need an enabling ecosystem carrying clear frameworks, taxonomy and incentives to build their sustainable finance portfolios.

In addition to taking the steps above, banks can also capitalise on opportunities in the areas of development and public sector finance, social and blue finance, and using technology and the fintech space as enablers for effective tracking of environmental and social impacts:

Banks can partner with **Development Finance Institutions (DFIs)** to finance large-scale projects with environmental and social objectives. **Blended finance** can be utilised as an effective development finance mechanism, combining official development assistance with commercial capital to achieve sustainable development objectives.

Public-private partnerships work effectively for both the public and the private sector. Collaborations between the public and private sectors can drive significant progress in sustainable finance, with the public sector identifying opportunities for sustainable development and inviting private capital and investments to fund the projects. By working together, resources can be pooled, expertise shared and scalable solutions developed for the benefit of the financial system.

Social projects in certain sectors can help with a **just transition**. Issuing **blue bonds** and financing through **blue loans** can generate and allocate funds for water and wastewater management, reducing ocean plastic pollution, marine ecosystem restoration, sustainable shipping, eco-friendly tourism, or offshore renewable energy (IFC)¹¹.

Transition bonds, designed to finance activities that have a reduced environmental impact or lower carbon emissions, and having gained prominence in Asian markets, can be a valuable tool for regulators and banks in the UAE to source capital and efficiently scale decarbonisation efforts.

Innovation and the use of technology through **green and social impact investing** and fintech can be a critical enabler in creating and capitalising on sustainable finance opportunities. Investing in and scaling technologies that help companies track the environmental impact of their operations and offset said impact through the purchase of verified carbon credits can significantly advance decarbonisation efforts in the industry.

11 | Guidelines for Ble Finance, IFC, (2022)



01. Accounting for sustainable finance and avoiding double counting

As sustainable finance activities grow within the UAE in line with both the CBUAE commitment and organisational targets set by banks individually, it is important to record and account for such growth fairly and accurately.

Sustainable financing can be offered by banks to customers, either individually or as a combination of three modes: Lending, investing and facilitating. The accounting for the financing will be determined by the roles of the banks in the activities or transactions under these modes. As multiple banks can be involved in common transactions, it is essential to determine the extent of the role each bank has in the transaction to avoid double counting. This is particularly relevant in the case of advisory services where underwriting or financing is provided by other banks and the bank providing advisory (facilitation) services should only be included when there is a clear rationale for inclusion, suitable disclosure is made, and the bank is satisfied that inclusion does not represent a double count.

02. Reporting and assurance

To determine the contribution of banks to the growth of sustainable finance and for self-accountability, banks should report on their progress through key metrics and targets. This should cover bond issuances, use and allocation of bond proceeds, the amount of sustainable finance lent, invested or facilitated by the banks, and the associated impacts.

Third-party assurance over sustainable finance activities reported by banks is essential to provide credibility and transparency to the process and build trust in the ecosystem to further attract investors and capital to fund sustainable activities.



Authored by:



Anand Balasubramanian
Partner, FS Consulting ESG
and Climate Risk Leader



Adil Hunain
Senior Manager



Mahasweta Mitra
Senior Manager



Henna Sakia
Manager

About PwC

At PwC, our purpose is to build trust in society and solve important problems. We're a network of firms in 151 countries with nearly 364,000 people who are committed to delivering quality in assurance, advisory and tax services. Find out more and tell us what matters to you by visiting us at www.pwc.com.

Established in the Middle East for over 40 years, PwC Middle East has 30 offices across 12 countries in the region with around 11,000 people. (www.pwc.com/me).

PwC refers to the PwC network and/or one or more of its member firms, each of which is a separate legal entity. Please see www.pwc.com/structure for further details.