



UAE: Energy Transition Leadership... Rapidly Developing Capital Markets

November 2023

Overview

- Historically, when people think of the UAE they think of hydrocarbons – this presentation sets out some projects demonstrating global leadership in energy transition by the UAE already functional
- Financially, we also set out some of the major gains in their stock markets during 2022 and H12023, led by an IPO boom – as well as green finance
- We mention future growth projects such as regional GCC rail (by 2030)
- We also present example in international leadership in energy transition (Masdar map)

UAE Hydrocarbons – Quick Review

- UAE is among the world's ten largest oil producers
- About 96% of UAE's roughly 100 billion barrels of proven oil reserves are located in Abu Dhabi, ranking #6 worldwide
- UAE currently produces 3.2 million bpd; Abu Dhabi National Oil Company (ADNOC) expects to reach 5 million bpd maximum sustainable production capacity by 2030
- UAE's GDP – 30% directly based on oil and gas industry and 13% of its exports
- In 2020, the UAE announced the discovery of over 80 trillion ft³ of gas resources; the goal is for UAE to become self-sufficient in gas supply (#7 globally) by 2030
- The UAE has made energy transition a priority; the UAE was the first Arab state to set a “net-zero” emissions target

Energy Transition

Leading Projects

Mohammed Bin Rashid Al Maktoum Solar Park

- The world's largest single-site solar park spread over a total area of 77 km²
- The project is one of the world's largest renewable projects based on an independent power producer (IPP) model
- Current total production capacity is 2,427MW. In June 2023, Dubai inaugurated the 900MW phase five; (UAE's Year of Sustainability/COP28 host)
- The 1,800MW 6th phase will increase the total production capacity to circa 5GW
- When completed in 2030, the AED50bn project will save more than 6.5 million tons of carbon emissions/yr

Energy Transition

Leading Projects

Hydroelectric Power Plant, Hatta

- Located near the community of Hatta, approximately 140 km southeast of Dubai in the Hajar Mountains on the northern border with Oman; it is the first of its kind in the GCC region
- The hydroelectric power station will use water in the Hatta Dam and an upper reservoir that is being built in the mountain. During off-peak hours, advanced turbines will use clean energy to pump water from the dam to the upper reservoir
- The 250MW station electricity generation could power up to 250,000 homes/ year, using the water stored in Hatta Dam. It will have a storage capacity of 1,500MWh and a life span of 80 years
- The \$387million plant is on track for completion in Q4 2024

Energy Transition

Leading Projects

Dubai's Waste-to-Energy Mega Project

- The world's largest and most efficient waste-to-energy facility in Dubai will become fully operational in Q1 2024
- The waste-to-energy plant, which is undergoing commissioning, currently processes 1,000 tonnes of waste daily. At its peak, the plant will process 5,666 tonnes of waste daily, equivalent to 2 MT to generate 220MW of electricity
- The plant will play a key role in helping Dubai achieve its goal of 75% waste diversion by 2025
- This is in addition to the Sharjah Waste to Energy Plant which has generated enough power to supply 2,000 homes, using household rubbish and industrial waste, in its first year in operation, ending May 2023

Energy Transition

Leading Projects

Desalination

- Most of the drinking water used in the UAE comes from the sea
- In July 2023, Veolia, the world leader in water technologies, announced it will lead the EPC on the Mirfa 2 desalination project which will be the 3rd largest desalination plant in the UAE. With a production capacity of 550,000 m³/day of potable water, it will provide clean drinking water to approximately 210,000 households
- This plant is in addition to the three water desalination plants the UAE is developing in Abu Dhabi, Dubai and Umm Al Quwain with a combined capacity of 420 million imperial gallons per day (MIGD) that will raise the country's total water capacity to 1,590 MIGD

Energy Transition

Leading Projects

Barakah Nuclear Power Plant Project

- Developed jointly by Emirates Nuclear Energy Corporation (ENEC) and KEPCO, Barakah nuclear power plant (NPP) is the first nuclear power station in the UAE and in the Arabian Peninsula as well as the first commercial nuclear power station in the Arab World
- It consists of four Advanced Power Reactor (APR)-1400 nuclear reactors; total capacity 5.4GWs, which is intended to supply up to 25% of UAE's energy needs
- Barakah NPP began operating in 2020, after a three-year delay. During the 2022 winter months, the plant met up to 48% of Abu Dhabi's electricity requirements
- Barakah NPP is already the largest single generator of electricity and the largest source of clean electricity in the region

Energy Transition

Leading Projects

China – UAE May 2023

- In May 2023, ENEC (UAE) signed MoU's with China's Nuclear Power Operations Research Institute, the China National Nuclear Corporation Overseas, and the China Nuclear Energy Industry Corporation
- China currently operates more than 53 nuclear energy projects and has about 20 more under construction
- China is years ahead of the world in developing non-explosive on shore nuclear using Thorium MSR - which it has stated it plans to build in 41 BRI countries

Financial Markets Recent Growth

Stock Exchanges

Overview

The UAE has three principal stock markets – all founded post 2000;

- Dubai Financial Market (DFM)
- Abu Dhabi Securities Exchange (ADX)
- Nasdaq Dubai

Over the past decade the UAE has emerged as a hub for international business in capital raising across a number of industries including construction, banking and finance

Financial Markets Recent Growth

Stock Exchanges – 2022 Performance

- In 2022, the ADX was the best-performing market in the GCC for a second consecutive year (FTSE ADX General Index (FADGI.FGI) gained more than 20% in 2022)
- In 2022, foreign investment in ADX increased, with total net foreign investments recording an inflow of Dhs24 billion. In addition, net institutional investments inflow reached Dhs8 billion
- ADX market capitalisation increased by 61.4% in 2022 to Dhs2.62 trillion. The increase was supported by a series of listings. In 2022, ADX listed 18 securities, including shares, bonds, warrants, and investment funds
- This is in marked contrast with global indices in 2022... these suffered the worst performance since the 2008 financial crisis, with the MSCI All-Country World Index falling more than 20%, the Nasdaq 100 by 33% and the S&P 500 19.4%

Financial Markets Recent Growth

Stock Exchanges – 2023 Performance

- H1 2023 performance – 8-year highs for DFM reached in July 2023
- In H12023, Dubai led the GCC markets with the DFM General Index rising 14%, or 456 points, to close at 3,792 points
- On 13th July 2023, DFM reached its highest point since August 2015, crossing the 3,987 level
- DFM was up nearly 20% YTD in July 2023, far surpassing MSCI World Index's 12.6% increase YTD. DFM recorded the lowest P/E ratio of 9.69x over the last 12 months
- The regional IPO boom from 2022 continued into 2023. In Q1 2023, the UAE capital attracted \$3 billion, placing it third worldwide (14% globally)

Financial Markets Recent Growth

MENA's Increasing Weight in MSCI Index

- In addition to the recent gains are structural changes occurring to UAE investment markets
- Goldman Sachs said MENA markets are set to continue posting strong growth, driven by the GCC, thus MENA's weight in the MSCI emerging market index can be expected to rise to 10% from 7.3% currently
- Goldman calculated that this re-rating will see emerging market investors moving from their current underweight position to market weight in MENA and thus drive more than \$5 billion of inflows over the medium term
- Goldman also expects MENA equity markets to increase by circa 10X by 2075 from their current levels, and become a sizeable bloc within the emerging markets market cap

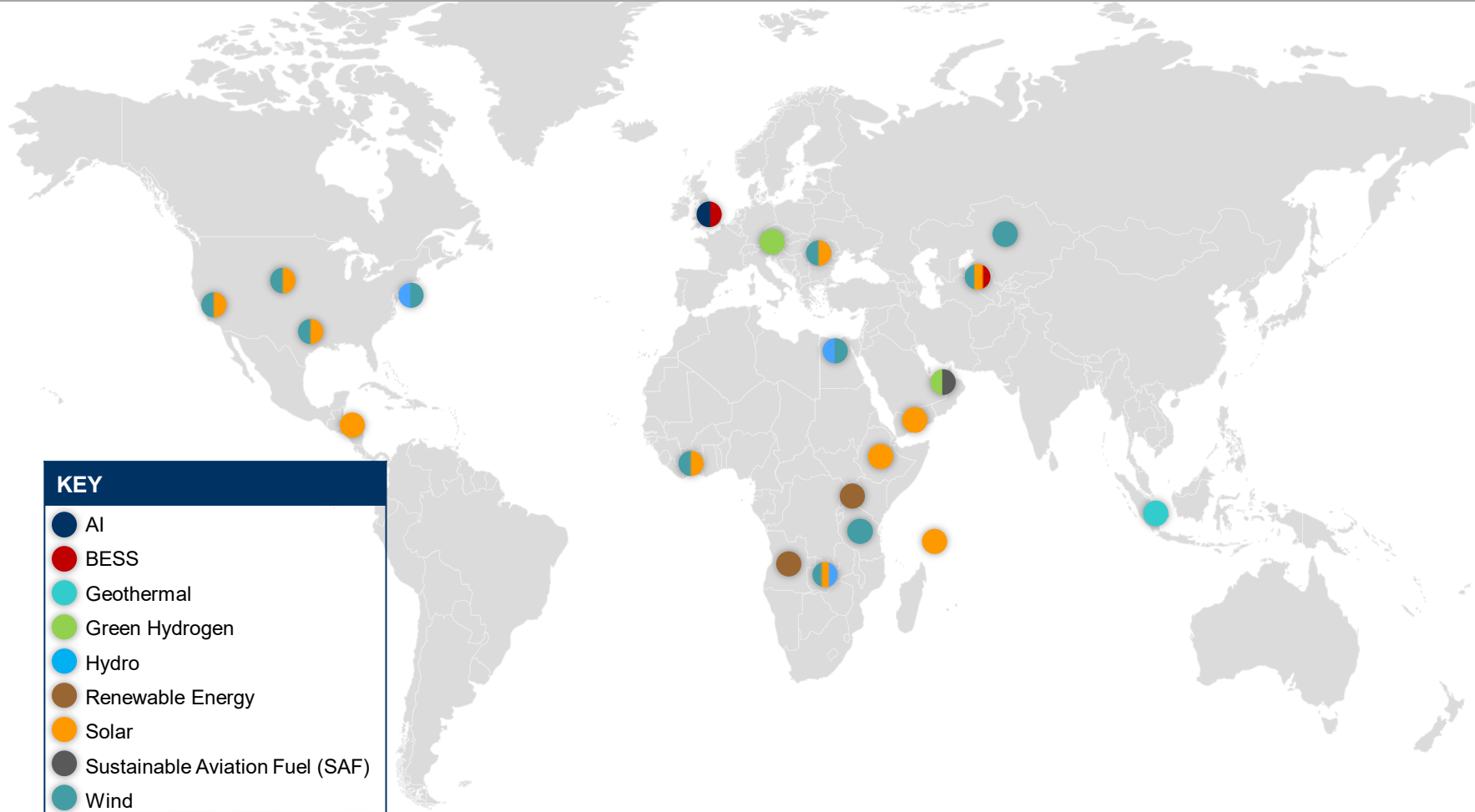
Regional Growth

GCC Rail Map by 2030



Regional Growth

Masdar Investments / MoUs / Pledges – 2022-July 2023



- 2022**
- Egypt** – Green Hydrogen / Wind
 - Ethiopia** – Solar
 - UAE** – Green Hydrogen / Sustainable Aviation Fuel (SAF)
 - UK** – BESS
 - Angola** – Renewable Energy
 - Uganda** – Renewable Energy
 - Tanzania** – Wind
 - Yemen** – Solar
 - Seychelles** – Solar
 - Zambia** – Wind / Solar / Hydro

- 2023**
- USA (Nebraska, Texas, California)** – Solar / Wind
 - Indonesia** – Geothermal
 - Romania** – Wind / Solar
 - Ivory Coast** – Solar
 - Uzbekistan** – Solar / Wind / BESS
 - Kazakhstan** – Wind
 - UK** – AI / BESS
 - Belize** – Solar
 - Austria** – Green Hydrogen

Regional Growth

Outbound Financial Investment – Recent Asian Partnerships – Hong Kong 2023

- The UAE has emerged as Hong Kong's premier MENA trading ally, with a 70% share of Hong Kong's total commerce within the region – both are BRI hubs (tourism and air transport)
- SMART cities: In June, the first BridgeME UAE-HK Smart City Business Delegation visited Dubai and Abu Dhabi. The delegation aimed to bridge the gap between the best smart city technology businesses in Hong Kong and the GBA of Mainland China to MENA via the UAE
- In September, Chinese Vice President Han Zheng met with UAE official Saqr Ghubash in Beijing , while the UAE was signing trade agreements in Hong Kong on the first day of the Belt and Road Initiative Summit. UAE intends to develop its cooperation with China in bilateral economic trade, investment, and also cultural exchanges
- In October, it was announced that the central banks of Hong Kong, China, Thailand, and the UAE, along with HMKA, are working on developing mBridge, a cross-border central bank digital currency (CBDC) initiative... to be launched by mid-2024

ONE PEOPLE... ONE PLANET

➤ HEALTH

➤ GREEN