

Climate Investment Update

MENA renewables: The next-gen energy export

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Multi-Asset - MENA

- ◆ MENA has significant renewables potential – particularly in solar – as well as significant renewables growth ambitions
- ◆ Much of the energy generated is destined for export, either in the form of green hydrogen, or via lengthy subsea cables
- ◆ Though still largely at an early stage, we think export projects make sense, especially in light of an energy-short Europe

MENA renewables potential is world-leading... Based on their solar potential, 10 out of the top 15 countries are located in MENA, including Egypt, Oman, Saudi Arabia, Morocco and the UAE (World Bank). Coastal areas of Saudi Arabia and Oman also have strong wind potential, especially at night – which is a helpful balance to daytime solar. The result is renewable power costs that sit right at the bottom of the global curve.

...its ambitions are out-sized to match... Against 12 GW of installed utility-scale solar and wind power capacity today (May 2022) there is a further 61GW (o/w 50GW solar) in the works – either under construction, in development, or announced – that is due online by 2030 (Global Energy Monitor (GEM)). Looking out to 2038, another 25GW is proposed in Oman. This rate of increase is around 3x the global average.

...and individual project sizes are also well above global averages. Per GEM, the average wind project (in Oman) has a capacity that is more than 70x the global average, while the average solar projects (in Oman and Kuwait) have capacities c15-20x the global average. We think these large sizes make sense – especially for solar – with the general flatness of the land being a key enabler.

Much of the energy generated is destined for export... Much of the energy to be generated is intended for use to make green hydrogen or ammonia, for example in Saudi Arabia and Oman, as well as Morocco. And much is also destined for export, a market that is likely to receive a significant boost as the EU pivots away from Russian fossil fuels. Although green hydrogen is the preferred way to export renewable energy, subsea cables are also an option.

...and though these projects are still early stage, the strategy makes sense. Overall we think the ambition to monetise the region's renewables resources via exports – in particular to an energy-short Europe – makes a lot of sense and we are encouraged by the direction of travel. We note that, as part of its REPowerEU initiative, the EU plans to be importing 10m tonnes of green hydrogen by 2030.

Key export-oriented projects – size and timing

Country	Project	Type	Size (GW)	Date online	Cost (bn)
Oman	Al Wusta	Solar + Wind	25	2038	USD36
Morocco	Xlinks	Solar + Wind	10.5	2027	GBP18
Morocco	Total Eren Guelmim-Oued Noun	Solar + Wind	10	2025	USD11
Saudi Arabia	Neom Green Hydrogen	Solar + Wind	4	2026	USD7

Source: Company announcements and filings, The Guardian, pv magazine, Afrik 21, Note: green hydrogen projects in bold

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We are most confident on solar; green-hydrogen-related projects are riskier

At the project level, in general we are more confident on solar as the industry is already at scale, is well-supplied, and has the benefit of immediate know-how. Wind projects are more challenging for logistical and structural reasons, while green hydrogen-related projects are clearly significantly riskier due to the still-nascent nature of that industry. With regard to the latter, we would say that partnerships, offtake agreements and involvement of traditional energy participants are likely indicators of bankability and credibility.

Key export-oriented projects – consortia

Country	Project	Consortium	Comment
Oman	Al Wusta	OQ InterContinental Energy	Oman state-owned oil and gas company HK-based renewable hydrogen developer; also working on the 26GW Asian Renewable Energy Hub in Australia, the first phase of which is due on line in 2028
Morocco	Xlinks	Enertech Xlinks	Kuwait-based clean energy investor UK-based co. with CEO of ACWA Power on the Board; energy generated to be exported to the UK via subsea cables
Morocco	Total Eren Guelmim-Oued Noun	Octopus Energy Total Eren	Leading European renewable energy investor Subsidiary of TotalEnergies
Saudi Arabia	Neom Green Hydrogen	ACWA Power NEOM	Saudi utility company (33%) Saudi state-owned future city project (33%)
		Air Products	US-based gas company (33%). Air Products will also own 100% of the hydrogen distribution infrastructure

Source: Company announcements and filings, The Guardian, pv magazine, Afrik 21, Note: green hydrogen projects in bold

Egypt also has significant green fuel ambitions

We note that Egypt is also looking to develop green hydrogen for export and for use as fuel for ships. Indeed, more than a dozen international companies have this year signed MOUs to develop green fuel (green hydrogen and/or green ammonia) facilities in the Ain Sokhna Industrial Zone (part of the Suez Canal Economic Zone). Final agreements are expected to be signed at COP27 (Enterprise, 21 September 2022). Egypt is also looking to export 3GW of renewable energy to Greece via a subsea cable.

Low cost of renewable power a key advantage for exports

A key advantage for the region when it comes to exports is the low cost of its renewable power – indeed the world's cheapest solar tariff was achieved in 2021 when Saudi Arabia signed a PPA for a record low of 1.04cents/kWh for the 600MW Al Shuaiba plant. There have also been very low solar tariffs (all at or below 1.69cents/kWh) announced in Dubai, Abu Dhabi and Qatar, and the Moroccan Xlinks project is estimating an LCOE (levelised cost of energy) of 1.30c/kWh.

Grids will need to be upgraded to handle domestic renewable consumption

Turning back to the renewable energy that will be not be exported but rather consumed domestically, we note that this will require suitable investment in the domestic grids in order to be able to effectively integrate intermittent renewable power. The UAE is an example of a country which is undertaking such investment, primarily through the Dubai Electricity and Water Authority (DEWA) and Abu Dhabi National Energy Company (TAQA). DEWA is also developing the world's largest single site solar project – the 5GW Maktoum Mohammed bin Rashid Al Maktoum Solar Park (where Phase 5 is on track to be completed by the end of 2023).

The global climate calendar: upcoming events

2022	Location	Event
13-27 September	New York, US	77 th Session of the UN General Assembly
18-23 September	South Korea	7 th International Marine Debris Conference
19-20 September	Paris, France	Euro-Global Climate Change Conference
19-25 September	New York, US	Climate Week. NYC 2022
22-23 September	London, UK	Renewable Power Generation (RPG 2022) Meeting net zero carbon
27-30 September	Geneva, Switzerland	Fifty-seventh session of the IPCC (IPCC-57)
6-18 November	Sharm el-Sheikh, Egypt	UNFCCC COP 27
5-17 December	Montreal, Canada	UN Biodiversity Conference: Part II
TBD	TBD	Synthesis report, IPCC AR6
2023		
9-10 February	Colombo, Sri Lanka	The 7 th International Conference on Climate Change 2023
20-21 April	Vancouver, Canada	Fifteenth International conference on Climate change: Impacts and responses
23-25 May	Oslo, Norway	The Global space conference on climate change 2023
6-17 November	Dubai, UAE	UNFCCC COP 28

Source: HSBC

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