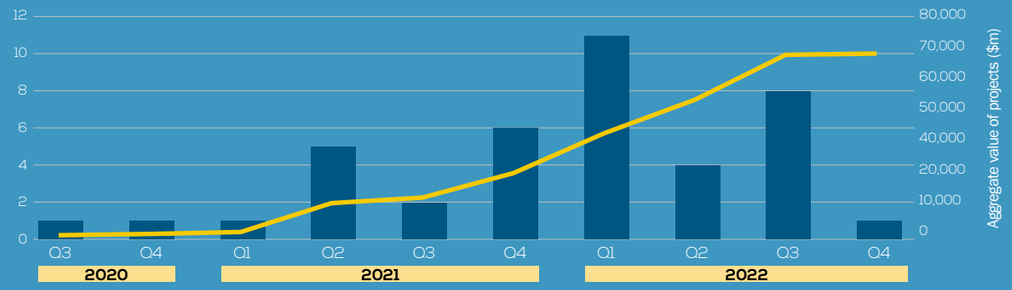
MARKET SNAPSHOT:
HYDROGEN PROJECTS

The value of all announced hydrogen plants in the Middle East and Africa is estimated at over $70bn and more than $120bn when factoring in associated elements such as air separation units, export facilities and renewable energy complexes

MIDDLE EAST AND AFRICA HYDROGEN PROJECT LAUNCHES BY YEAR AND QUARTER

The acceleration in the market is reflected by the rapid increase in announced projects. In the first quarter of 2022, there was the equivalent of one new project announced a week.



Covers only hydrogen plant element | Source: MEED Projects

ACTIVE PROJECTS

While hydrogen is fast emerging as Mena states seek to take advantage of cheap solar energy and enhance their position as global energy exporters, only two projects so far are under construction (Ain Sokhna pilot and Neom)

SELECTED ACTIVE MIDDLE EAST AND AFRICA RENEWABLE ENERGY PROJECTS

Project	Country	Budget ($m)	Status	Electrolyser capacity (MW)	Renewable energy capacity (MW)	Green hydrogen (t/y)	Ammonia (t/d)	Stakeholders
Green Energy Oman	Oman	28,000	Feasibility	13,000	25,000		27,400	OQ, InterContinental Energy, EnerTech
Amun	Morocco	16,000	Concept		15,000			CWP Global
Acme Group green hydrogen hub	Egypt	13,000	Concept					Acme Group
SCZone hydrogen plant 4	Egypt	11,000	Concept					Globeleq Company
Masdar: Hassan Allam SCZone green hydrogen project	Egypt	10,000	Feasibility			100,000		Masdar, Hassan Allam
RenewPower SCZone green hydrogen project	Egypt	8,000	Concept			220,000		Renew Power, NREA, EETC, TSE
Neom Helios Green Fuels	Saudi	6,500	Execution	2,000	4,000	650,000	3,290	Acwa Power, Air Products, Neom, Baker Hughes, Thyssenkrupp
Posco green ammonia plant	Oman	5,000	Concept		4,000			Posco
H2 Oman	Oman	5,000	Concept	2,200	3,500	1,000,000	2,740	Acwa Power, OQ, Air Products
Engie-Masdar hydrogen hub	UAE	4,200	Concept		200	34,700		Engie, Masdar
Sohar Port/Port of Rotterdam project	Oman	4,000	Concept		3,500			Sohar Port, Port of Rotterdam
Green hydrogen export plant	Saudi	4,000	Concept					PIF, Posco, Samsung C&T
Phelan green ammonia project	Egypt	3,500	Concept				6,849	Phelan Energy Group
SCZone hydrogen plant 1	Egypt	3,500	Concept					Alfanar
1GW waste-to-hydrogen project	Egypt	3,000	Concept			300,000		SCZone, H2Industries
Sasol Boegoebaai Green Hydrogen Project	Saudi	3,000	Concept	2,800		400,000		Sasol, Itochu
Acme green hydrogen and ammonia facility	Oman	2,500	Feasibility				2,200	Acme Group, Tatweer, Scatec
Hyphen green hydrogen complex	Namibia	2,000	Concept			125,000		Enertrag, Nicholas Holdings
Taqa: AD Ports green ammonia plant	UAE	2,000	Concept		577	100,000		Taqa, Abu Dhabi Ports, Thyssenkrupp
Taqa-Emirates Steel	UAE	2,000	Concept					Taqa, Emirates Steel
Sonangol Angola hydrogen project	Angola	2,000	Concept					Sonagol
HDF Energy Swakopmund hydrogen project	Namibia	2,000	Concept					Hydrogene de France

Source: Hydrogen projects 2022 report; MEED Projects. Visit our reports store at buy.meed.com

GREEN ENERGY OMAN

Located in Duqm, Oman, this plant will transform renewable energy through electrolysis to produce 1.8 million tonnes of green hydrogen a year. Production, storage and export of ammonia of up to 10 million tonnes annually is planned. Prequalification of EPC contractors is expected to start in 2025, with first production anticipated in 2028.

Estimated cost:	$28bn
Solar/wind energy capacity:	25GW
Electrolyser capacity:	14GW
Project sponsors:	OQ, Intercontinental Energy, EnerTech
Start date:	2026

H2 WASTE TO HYDROGEN PLANT

This project involves developing a 1GW liquid organic hydrogen carrier hub at Egypt's northern entrance to the Suez Canal. Production of 300,000 tonnes of green hydrogen a year with electricity generated from 4 million t/y of organic waste and non-recyclable plastic is planned. The project is expected to be implemented in three phases with the first phase due for completion by the end of 2026.

Estimated cost:	$3bn
Location:	East Port Said Industrial Zone
Status:	Study
Project sponsor:	H2 Industries
Start date:	2024

KEZAD BROOGE HYDROGEN

Planned for Abu Dhabi's Khalifa Industrial Zone, this project is anticipated to have a capacity of 300,000 metric tonnes of green ammonia in its first phase. A capacity expansion of up to 600,000 metric tonnes of green ammonia a year is planned under the second phase. Main contract tender issue, as well as commercial bid submission, are expected during Q3 2023.

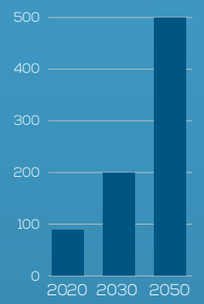
Estimated cost:	$1.5bn
Ammonia capacity:	822 tonnes a day
Project sponsor:	Brooge Energy
Start date:	2024

FORECAST GLOBAL HYDROGEN DEMAND

Thanks to factors such as net-zero targets, diversity and security of supply, and increasing gas prices, demand for hydrogen is expected to increase dramatically. As more production comes onstream and technology improves, the average cost of green hydrogen is forecast to decrease to about $2 a kilo in 2030 from $5 today

DEMAND GROWTH

Million tonnes a year



Source: IEA

MARKET DRIVERS

MIDDLE EAST & AFRICA HYDROGEN PROJECTS 2023

MEED's latest report helps you make the most of the opportunities in one of the world's largest and most innovative projects markets. The 200-page-plus report includes dozens of tables, graphs and maps, covering each of the hydrogen projects. Please visit buy.meed.com/product/middle-east-africa-hydrogen-projects to purchase.

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