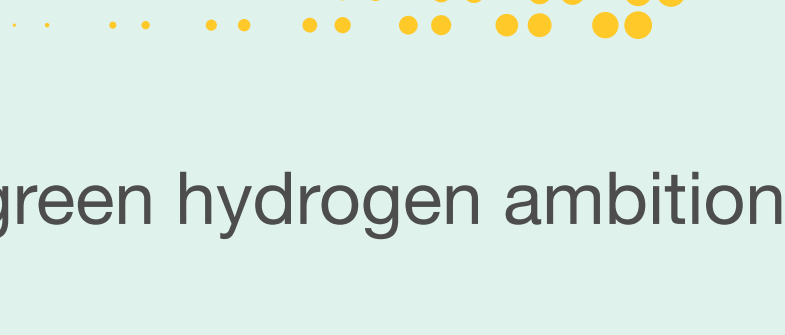




GREEN MEANS GO



The MEA region's green hydrogen ambition

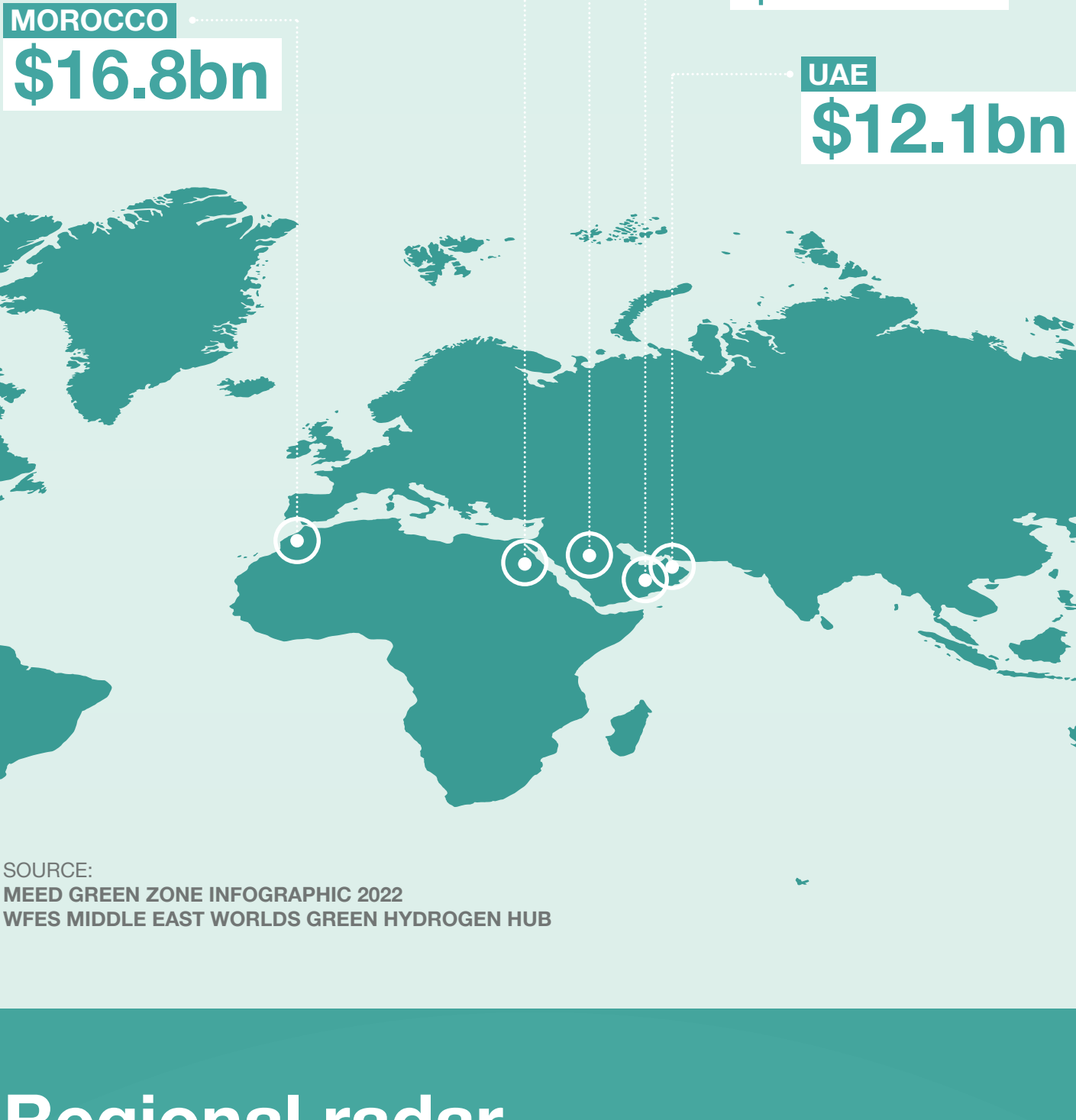
The MEA region is home to more than 50 green hydrogen projects totalling estimated investment of at least

\$165bn

SOURCE: MEED GREEN ZONE INFOGRAPHIC 2022
WFES MIDDLE EAST WORLDS GREEN HYDROGEN HUB

TOP 5 COUNTRIES BY INVESTMENT (\$)*

*Including green ammonia projects



SOURCE: MEED GREEN ZONE INFOGRAPHIC 2022
WFES MIDDLE EAST WORLDS GREEN HYDROGEN HUB

Regional radar

Saudi Arabia

NEOM Green Hydrogen Project
\$8.5bn

World's largest utility scale, commercially based hydrogen facility

Target
600 tonnes clean hydrogen per day (2026)

Oman

Green Energy Oman project
\$28bn

World's sixth largest green hydrogen project

Target
Up to 1.8mn tonnes green hydrogen per annum (2038)

UAE

Project Crystal
\$5bn

Masdar and ENGIE green hydrogen facility

Target
200MW capacity (2025)

EGYPT

Masdar-Hassan Allam green hydrogen plant projects
\$10bn

2 plants: Suez Canal Economic Zone and Mediterranean coast

Target
Up to 480,000 tonnes per annum (2026)

MOROCCO

AMUN green hydrogen project
\$16bn

Masdar/ENGIE green hydrogen facility

Target
2 – 2.5mn tonnes of green ammonia (2027)

SOURCE: NEOM - GREEN HYDROGEN PROJECT
ZAWYA - GREEN ENERGY OMAN
MASDAR UAE - ANNUAL SUSTAINABILITY REPORT 2022
MASDAR EGYPT - LANDMARK AGREEMENT TO DEVELOP 4 GW FURTHER AFRICA - TOP 5 UPCOMING SOLAR PV PROJECTS
MEED - REGIONS 155BN HYDROGEN PROJECTS REQUIRE FOCUS
CWP - HYDROGEN

DID YOU KNOW?

Green hydrogen currently constitutes just

2%

of global hydrogen production however global low-carbon hydrogen demand is set to increase from below 1Mt in 2022 to 223Mt by 2050.

In the next decade, electrolyser technology capex is expected to drop by

35-65%

as manufacturing scales up and automation kicks in.

Sub-**\$2/kg** green hydrogen will be achievable in most markets by

2040

with a sub-**\$1/kg** figure realisable by 2050.

Soaring **demand** and plummeting future capex costs present an **investment opportunity** of at least

\$600 BILLION

SOURCE: WOODMAC - HYDROGEN THE US \$600 BILLION INVESTMENT OPPORTUNITY
ZAWYA - ANALYSIS MIDDLE EAST
MEED - HYDROGEN AMBITIONS
IRENA - ENERGY TRANSITION

Production of green hydrogen in the Gulf region costs around 1/3 of the global average.

WHY?

- Availability of high-yield renewable resources (the sun)
- Areas of large-scale capacity development-ready unused land
- Ready access to sea water
- Low domestic consumption (gas/electricity cheaper than hydrogen also support export potential)

Opportunity

SOURCE: STRATEGY & PWC - THE DAWN OF GREEN HYDROGEN