Prospects for the Hydrogen Market:
A MENA Perspective

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Clean Energy Business Council
مجلس صناعات الطاقة النظيفة
Middle East & North Africa
الشرق الأوسط وشمال افريقيا

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MENA region is facing two major challenges: it is a climate hotspot & needs to prepare for its post-oil future. Investments in Renewable Energy & Clean Tech are imperative

Building blocks of the Clean Energy Ecosystem

MENA Clean Energy drivers and challenges

Climate change: Region is highly vulnerable to warmer temperatures and water scarcity and the global energy transition.

Urbanisation and demographic changes: The region is moving towards denser cities and urbanised settlements.

Post-oil economies and demand for energy: Clean energy sources are abundant in the region and good progress is being made in their deployment.

Cybersecurity, IoT, connectivity and analytics: Energy & critical infrastructure more vulnerable to cyber attacks.

Health, happiness and well-being: With improving living conditions, health and happiness are becoming a priority for the population.

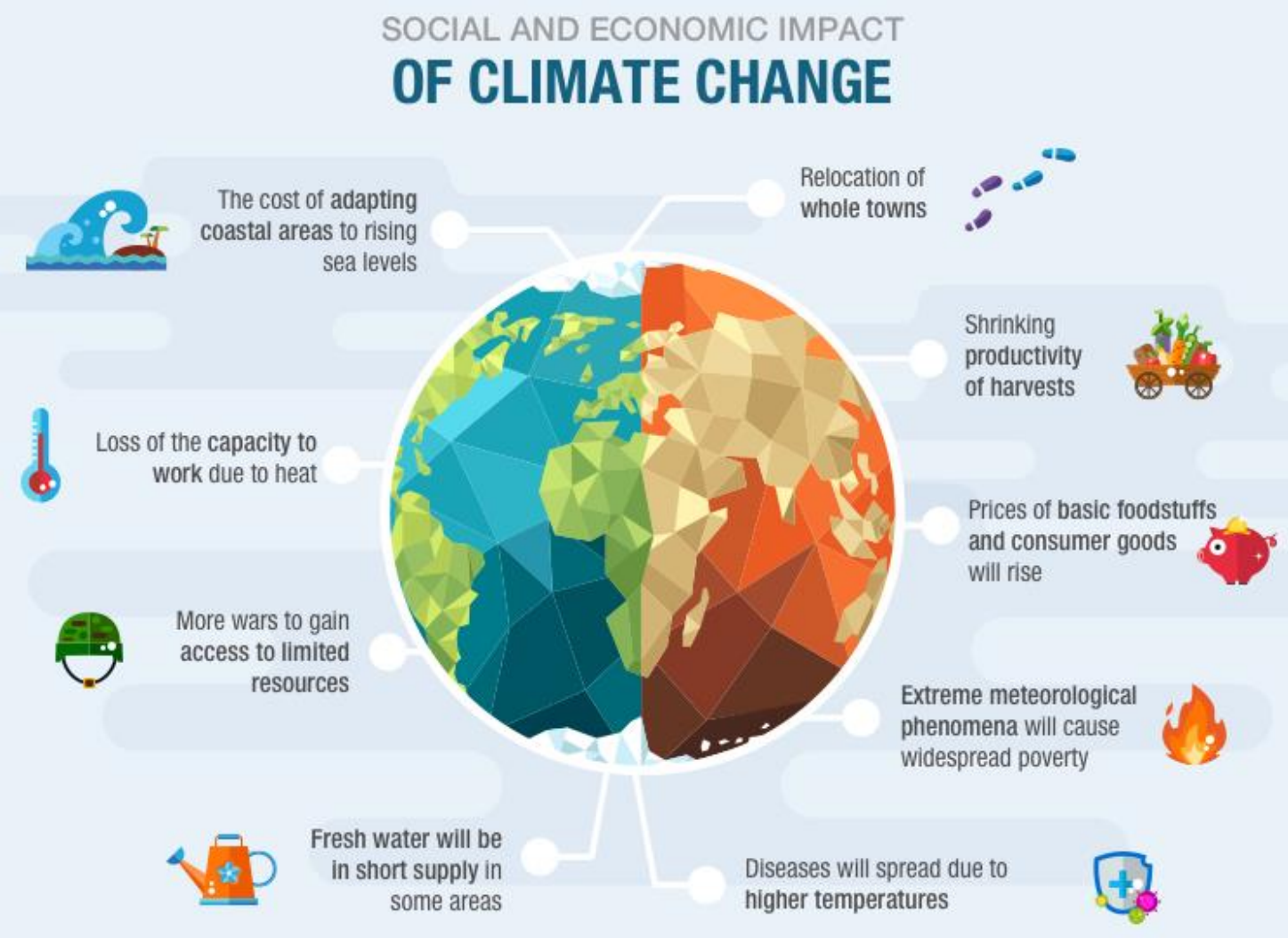
Artificial intelligence, robotics and automation increasingly integrated into daily activities & processes. How does this impact the energy transition? What is the impact on labour markets?

Addressing climate change will change geoeconomy & geopolitics

Climate change is being recognized worldwide as **a growing & imminent threat** => **needs immediate action, risk mitigation and adaptation**

Countries around the globe, especially **oil exporting states** (esp. GCC) need to **reexamine their economic strategies and adapt** to the changing landscape & energy transition.

Transition to sustainable energy systems = boosting demand for hydrogen and hydrogen-based fuels



Hydrogen market is in its infancy: need to nurture the bases of a well-defined market

Key policy recommendations for Hydrogen Market

- Develop strategies & roadmaps on hydrogen's role in energy systems
- Create strong incentives for using low carbon hydrogen to replace fossil fuels
- Mobilize investment in production assets, infrastructure & factories
- Provide strong innovation support to ensure critical tech reaches commercialization quickly
- Establish appropriate certification, standardization, & regulatory regimes
- International trade in hydrogen will be a vital part of the hydrogen supply chain

Source: IEA

Green hydrogen and its derivatives will be responsible for 12% of final energy use by 2050, along with electricity – it will represent 58% of final energy consumption, based on current technologies

The large-scale deployment of green hydrogen will require the establishment of an **organised hydrogen market, at the local, national, and global levels**

Some challenges facing the nascent hydrogen market

Q1. Is there sufficient demand?
A budding interest in green hydrogen, but no real demand for products made using green hydrogen – such as green steel or green ammonia

Q2. How is hydrogen traded?
Mostly through **bilateral agreements** between companies; NO public trading
Negatively affects international trade opportunities for nations with a high potential for green hydrogen production & export (esp. GCC w/ low domestic hydrogen demand + consumption)

Q3. How about infrastructure? A chicken & egg problem!
Without a clear understanding on consumption of hydrogen, infrastructure development will not move forward
Investments for new grids, repurposing of existing infrastructure or dedicated terminals in ports are **highly capital-intensive activities that require a clear vision** over the points and offtake of green hydrogen

Bottomline: Policy makers need to address these challenges and barriers

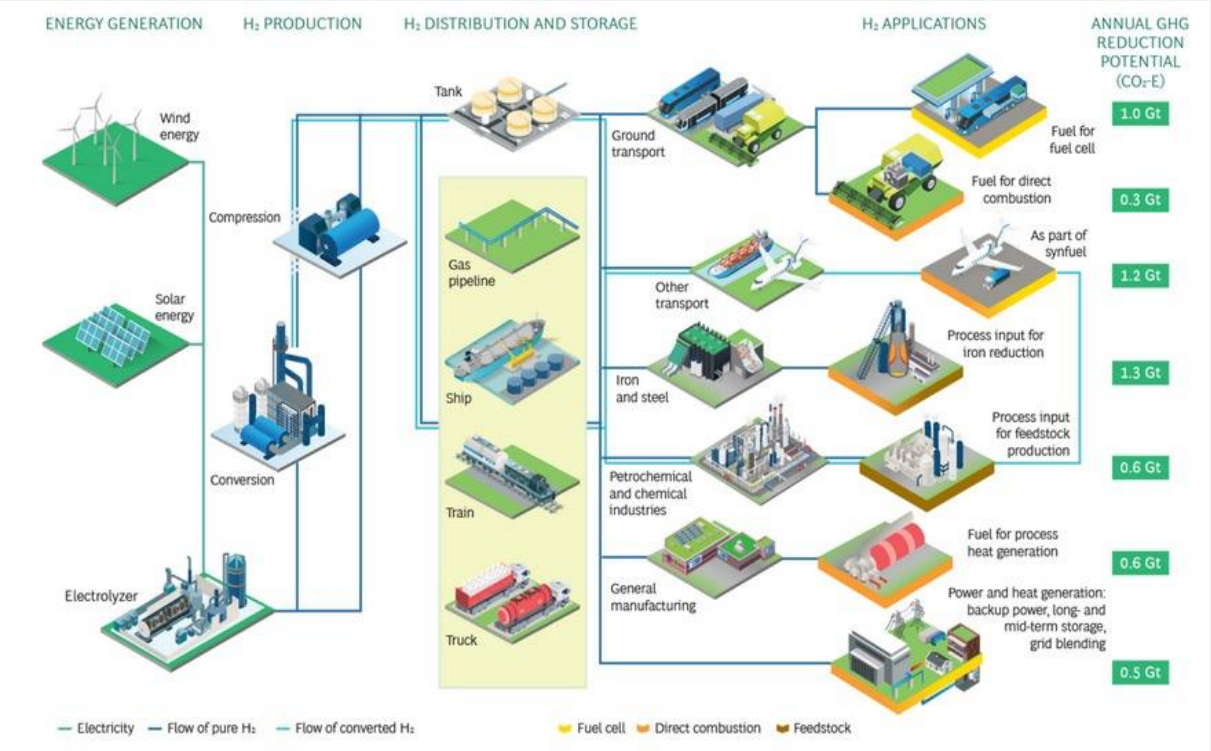
Imperative that key players collaborate to set, define & implement common standards. What is Green, Blue, Grey and Brown Hydrogen?

How can policy makers address these challenges & barriers?

1. Support the growth of a sustainable hydrogen market: **define & introduce standards** + a **green hydrogen tracking system**
2. To maintain its long-term health => need **collaboration between governments, industry and technical bodies**

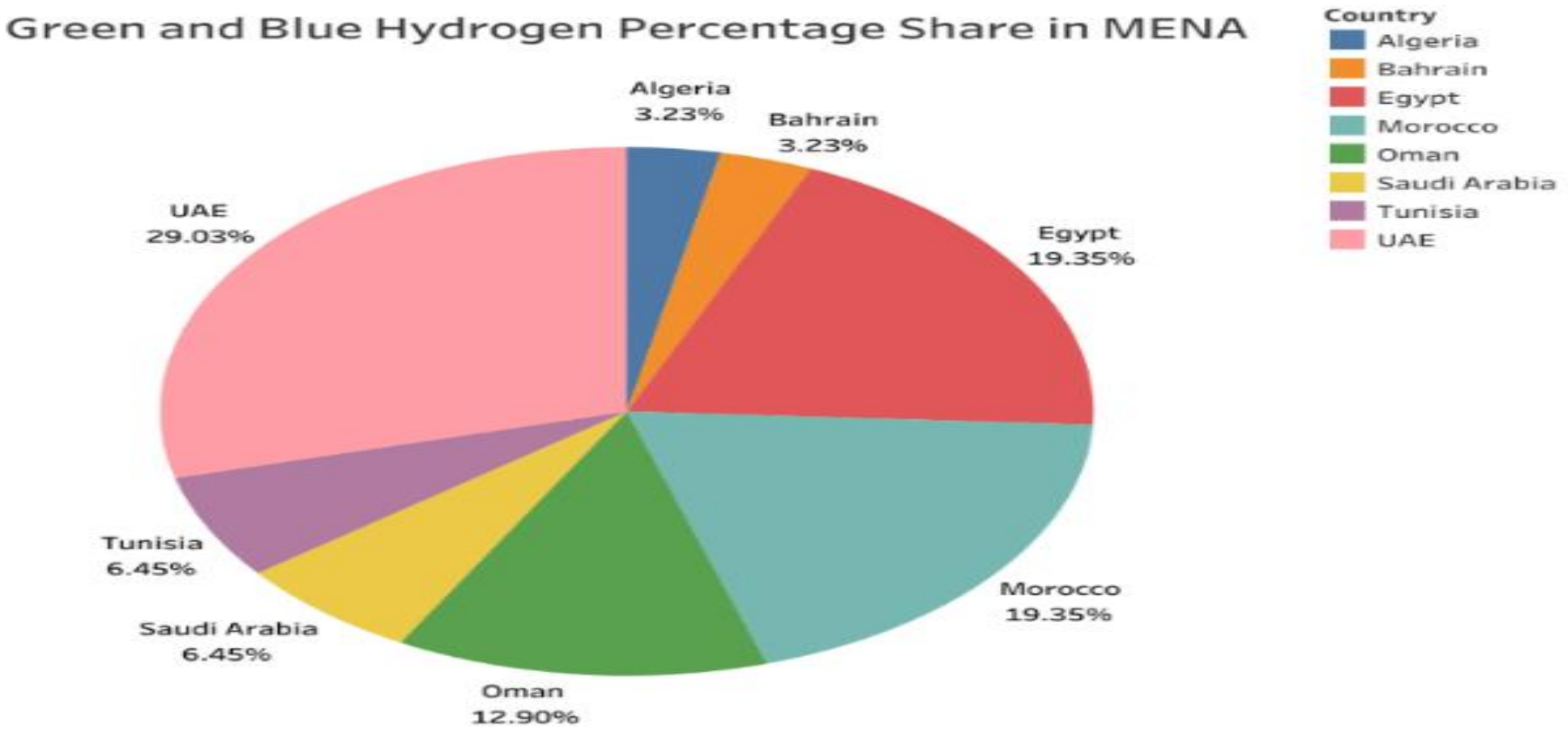
Together 1+2 => **provide an economic stimulus** – key in driving the large-scale deployment of renewable hydrogen

The Green Hydrogen Ecosystem



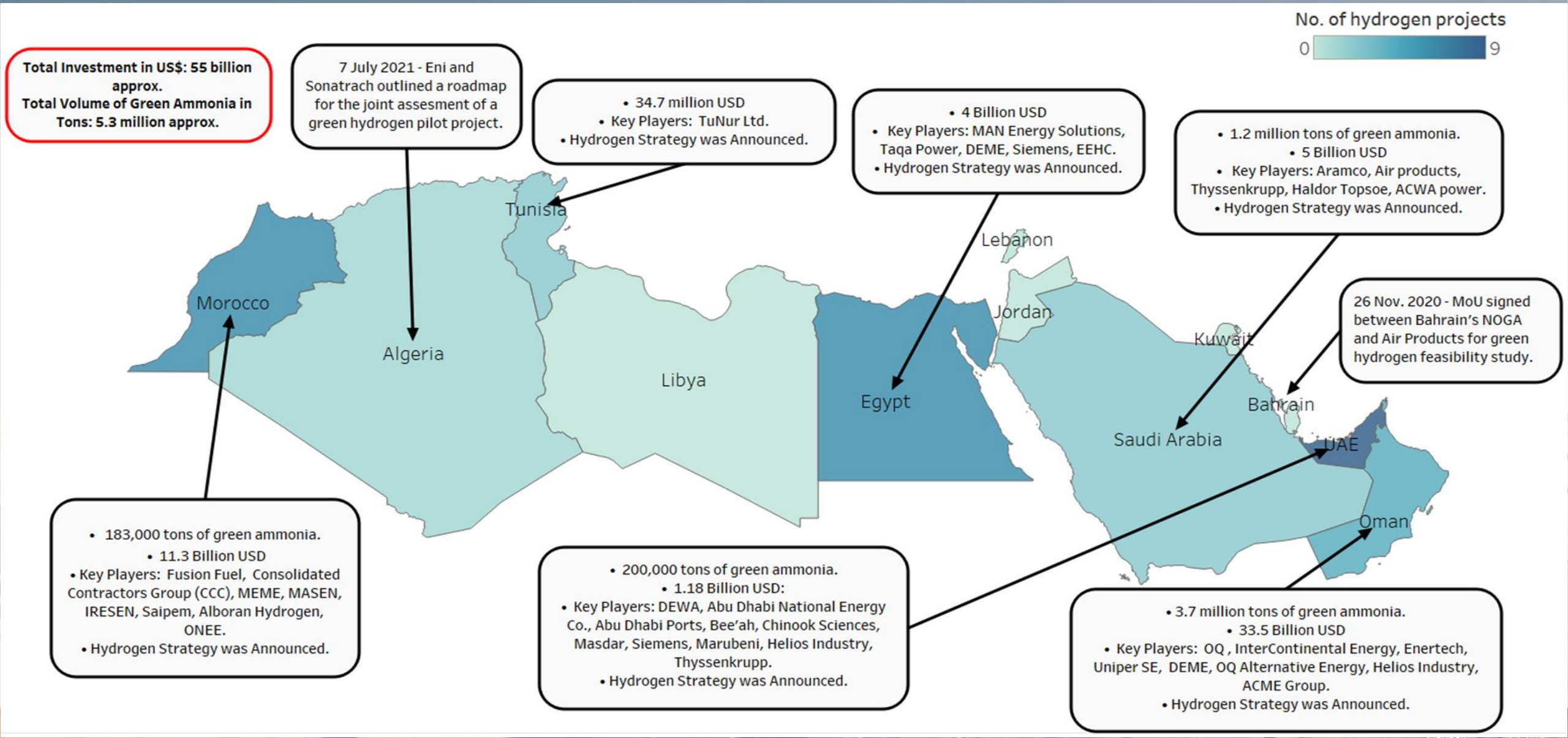
Source: BCG analysis

Hydrogen in MENA: an infant, but rapidly developing market.



Investments of $55bn, 5.3 mn tonnes

Hydrogen in MENA: GCC can become a major global exporter



GCC countries need to prepare themselves for an EU carbon border tax

The **EU commission presented plans for the world's first carbon border tax on imports** on carbon intensive products (steel, aluminum, cement, fertilizers…) to help meet its new climate target + become world's first climate neutral continent

B**order levy should come into action from 2026**; designed to protect European industries from competitors abroad whose manufactures are not charged for its carbon output

For the **Gulf** (producer of large quantities of steel, aluminium, fertiliser, electricity, cement - all of which will be taxed under the new EU legislation) **now is the time to shift gears and ensure the industries are equipped to deal with this change**

A tax on carbon emissions tied to imports => ↓ profits for foreign suppliers of oil and steel & other goods with high GHG footprint => **essential that GCC companies manage their carbon footprints with greater urgency**

Imperative that GCC nations recognize the carbon border tax & take necessary steps to decarbonize

GCC future target to reduce CO_2 emissions

Country	Target	Year
Saudi Arabia	Reduce power consumption by 8%	2021
	Reduce peak demand by 14%	2021
Oman	Reduce greenhouse gas (GHG) emissions by 2%	2030
UAE	Reduce the power consumption in Dubai by 30%	2030
	Reduce power consumption by 40%	2050
	Improve the efficiency for corporates and individuals by 40%	2050
	Reduce the electricity generation carbon footprint by 70%	2050
Kuwait	Reduce power consumption by 30%	2030
	Improve power generation efficiency by 15%	2030
Qatar	Reduce the per-capita power consumption by 8%	2022
Bahrain	Reduce the power consumption by 6%	2025

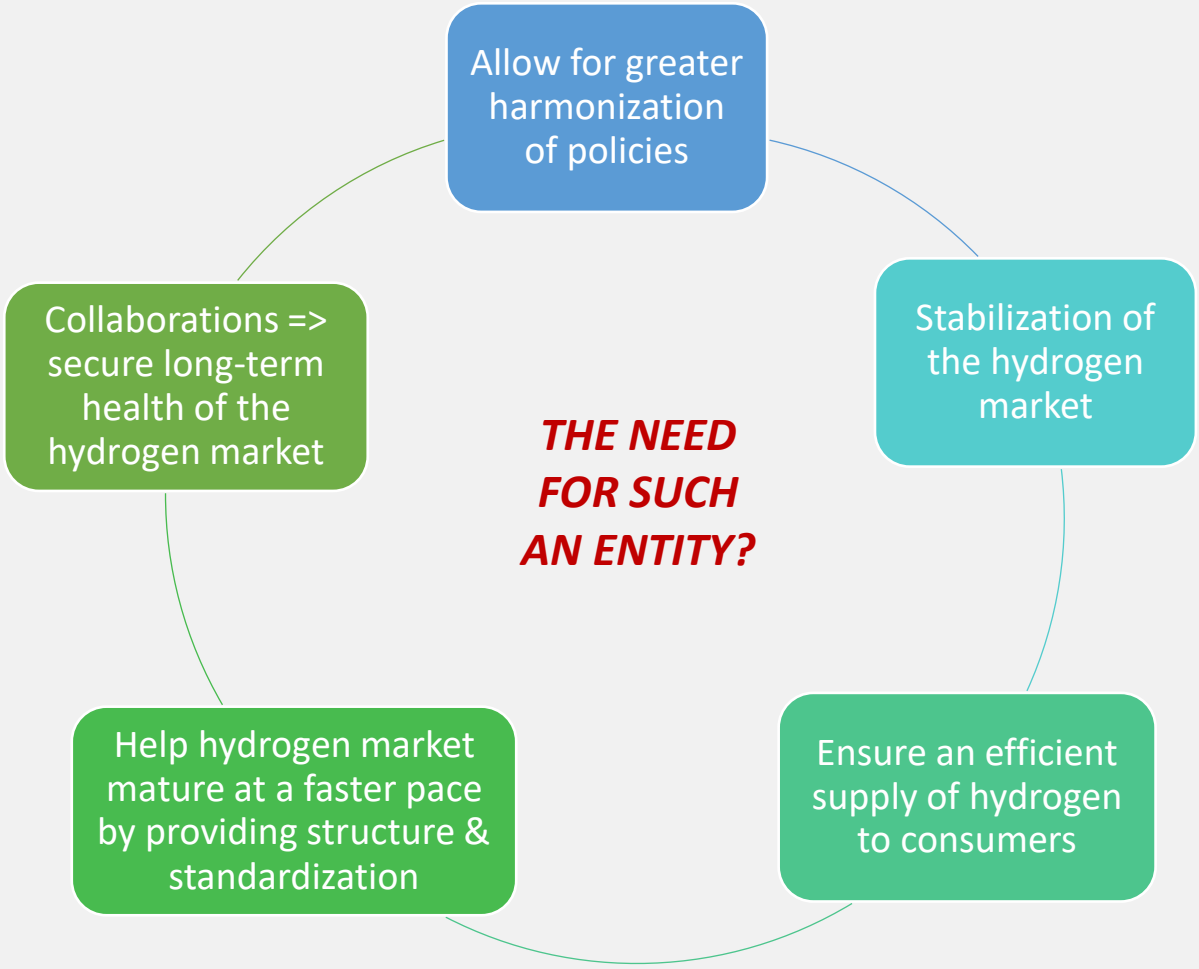
Source: GCC Countries Climate Change Mitigation Challenges & Exploration of Solar & Wind Energy Resource Potential, Applied Sciences (2021)

Hydrogen exporters should form a club similar to OPEC. How and why?

Time to work towards establishing OPEC-like organizations for Clean/Renewable energy producers and hydrogen exporters: an OREEC or OCEEC

Mission & Vision:

1. Set goals for the long-term health of the market
2. Work together to identify common ground
3. Will support intergovernmental organisations to work towards removing barriers & expanding the hydrogen market
4. **Total investment $55bn, 5.3 mn tons**



Thank you

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