



International Partnership
for Hydrogen and Fuel Cells
in the Economy

UAE UPDATE

Fueling the Future: UAE National Hydrogen Strategy (NHS)

IPHE Secretariat

March 2024

UAE Update on the National Hydrogen Strategy

“We must not rely on oil alone as the main source of our national income. We have to diversify the sources of our revenue and construct economic projects that will ensure a free, stable and dignified life for the people”



His Highness Zayed bin Sultan Al Nahyan
Former President of the United Arab Emirates

“We have to strike a balance of responsibility between our duty to update other sources of energy, protecting the environment, and ensuring a proper legacy for the next generations”



His Highness Sheikh Mohamed bin Zayed Al Nahyan
President of the United Arab Emirates

The UAE has set an ambitious target to be amongst the top global producers of low carbon hydrogen by 2031



To meet this target, the UAE National Hydrogen Strategy established a clear strategic framework with relevant targets and KPIs



• Create a robust hydrogen economy in the UAE to support the national decarbonization efforts

2031 Target
25% emission reduction in hard to abate sectors

2050 Target
100% reduction in hard to abate sectors



Drive the hydrogen economy resulting in foreign direct investment, job creation and workforce upskilling

2031 Target
184,000 new jobs created

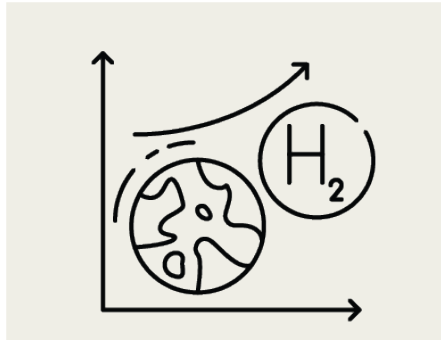
2050 Target
500,000 new jobs created



Embed innovation in the UAE's industrial clusters

2031 Target
R&D hydrogen center established

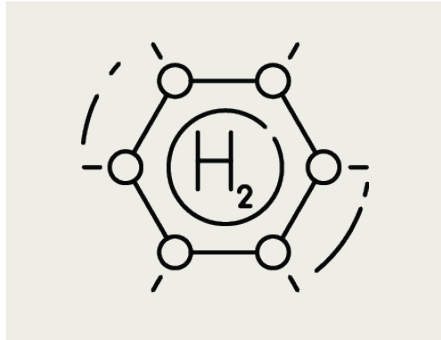
2050 Target
Globally recognized hub for hydrogen



Establish the UAE as a leading global producer and exporter of low carbon hydrogen

2031 Target
Production of 1.4 mtpa of H2

2050 Target
Production of 14.9 mtpa of H2



Develop a resilient hydrogen supply chain to support domestic industry growth

2031 Target
Establishment of 2 hydrogen oasis in the UAE

2050 Target
Establishment of 5 hydrogen oasis in the UAE



Positioned to lead



- The UAE is well positioned to develop a hydrogen supply chain and hasten its transition to clean energy due to its plentiful natural resources and the advantages it has gained through its leadership in energy markets.
- The UAE's mission to leverage both natural and 'engineered' advantages refers to natural advantages such as gas reserves, solar radiance, geographic location, and others such as infrastructure, export facilities, industrial presence, and global trade agreements.

	•Ample Energy Resources		•Access to Markets
	•Strong Existing Industry Presence		•Strong Renewable Investment Portfolio
	•Existing Supply Chain Infrastructure		•Skilled and Innovative Workforce

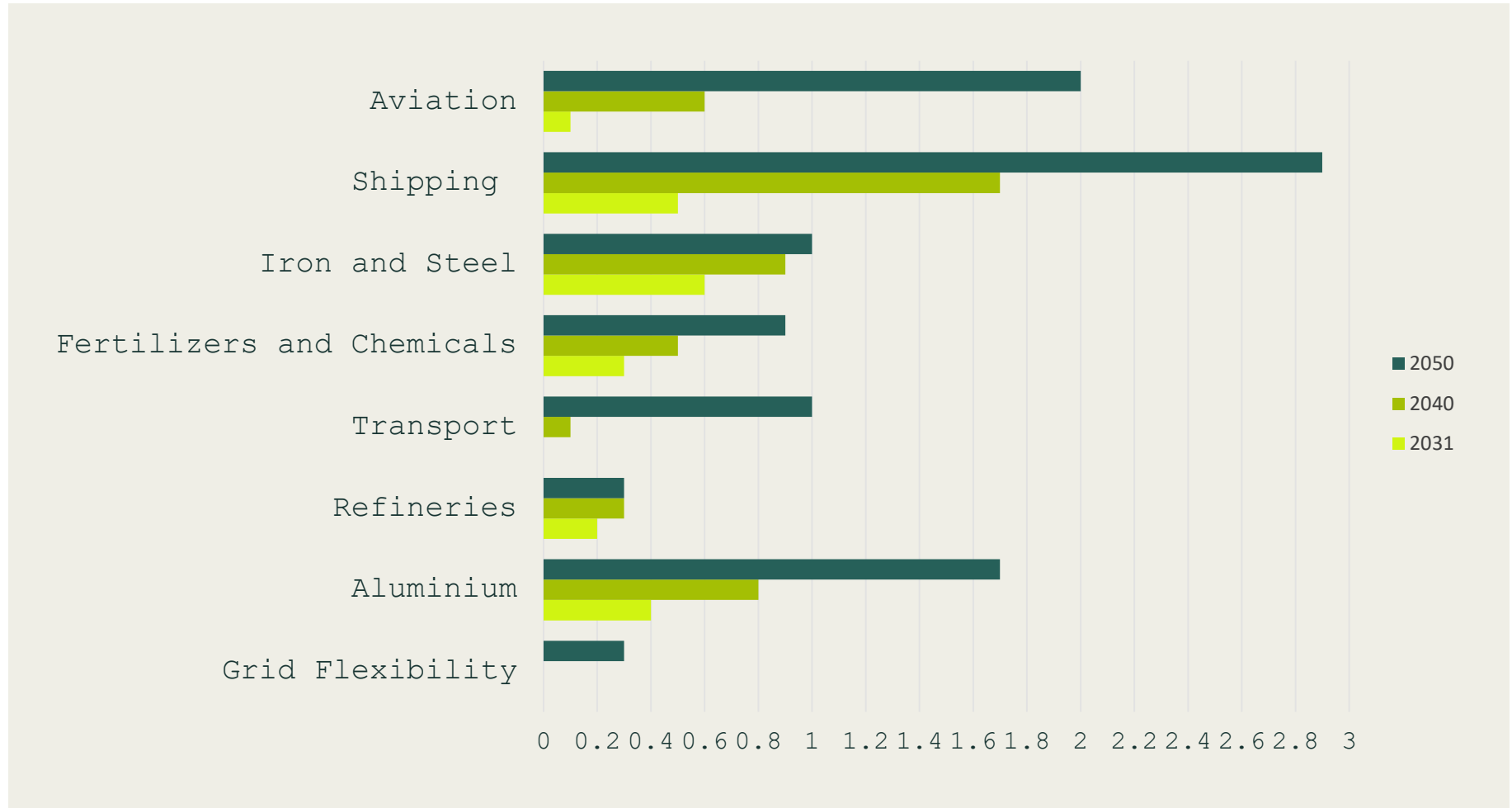


The opportunity for the UAE currently lies in meeting the forecast domestic demand



The UAE's Hydrogen Potential

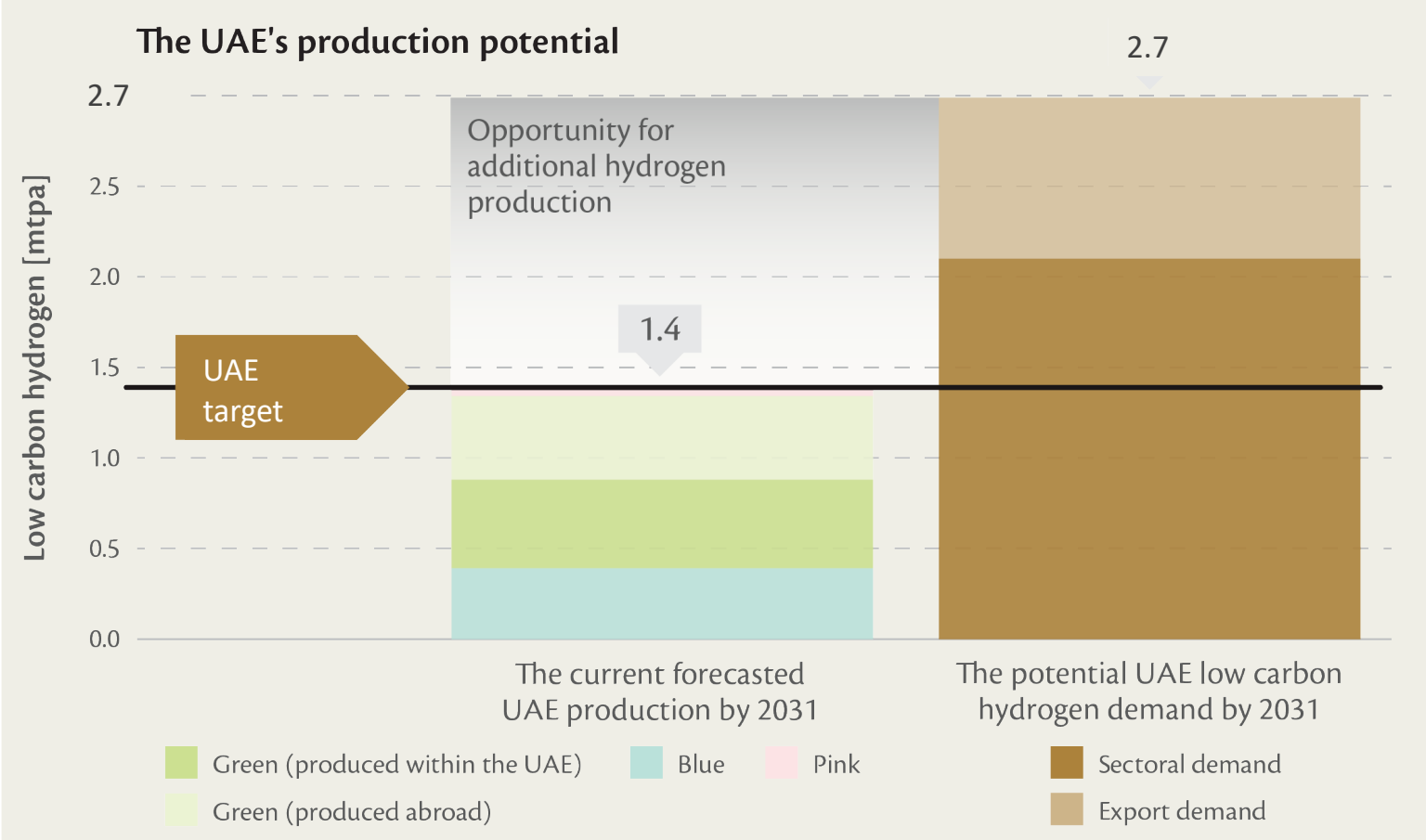
- Demand for H2 varies depending on its use. Factors such as the pace of the energy transition, technology adoption, and policy and financial support also play a role in determining demand.
- Hydrogen sectoral domestic demand in the UAE could potentially grow more than fivefold between 2031 and 2050.



UAE hydrogen production forecast 2031



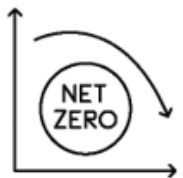
The UAE currently has a forecasted production of 1.4mtpa by 2031, however global trends show that there is an increase anticipated with regards to hydrogen demand and this may be reflected in the local market.



Meeting Net Zero 2050, hydrogen's role beyond 2031

2050 Net Zero Alignment

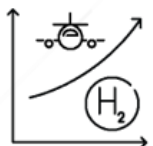
- Under the 2050 Net Zero strategy, the “Diversify Scenario” developed outlines a pathway to a decarbonised future.
- The Diversify Scenario includes:



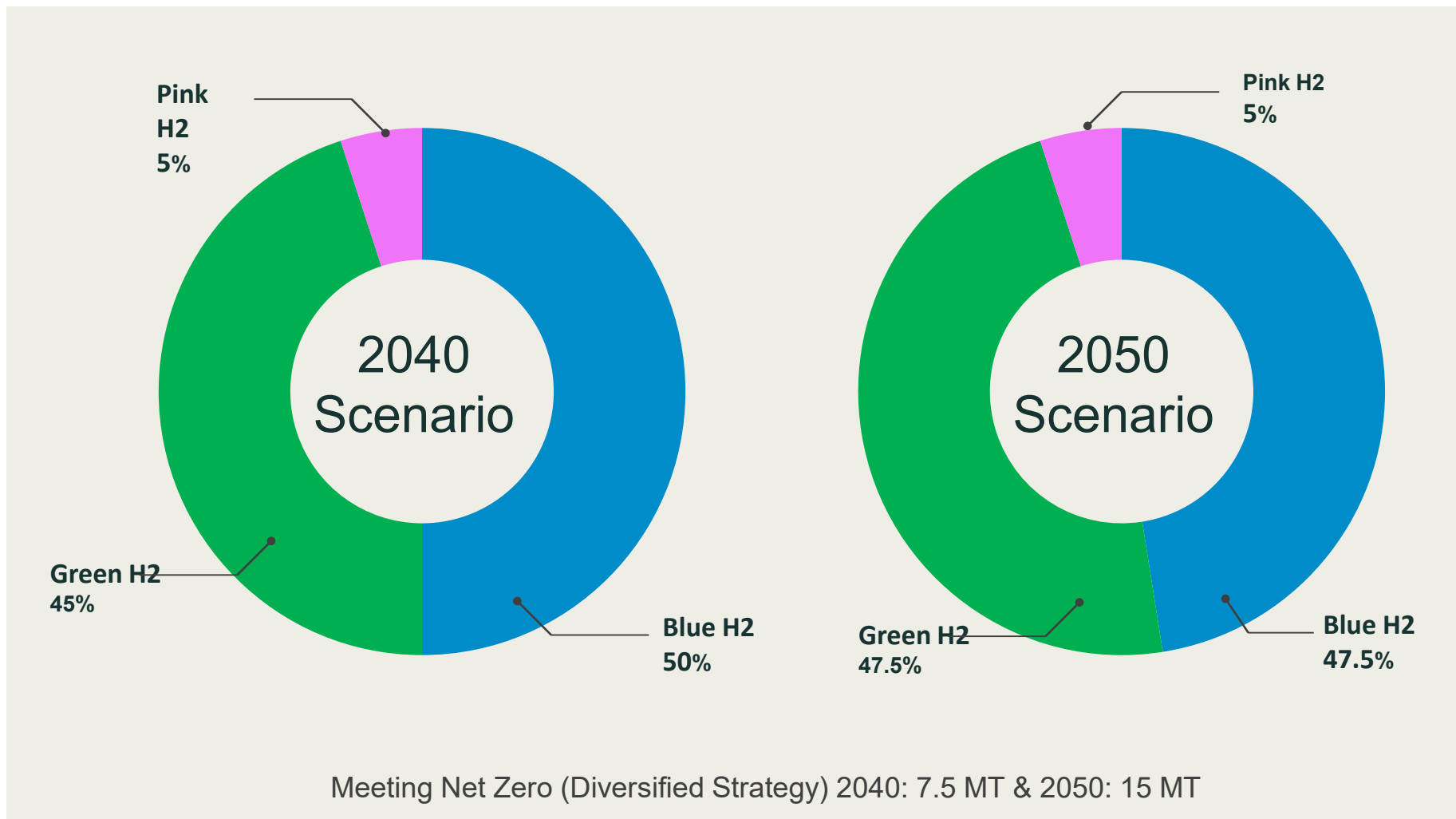
Aiming to achieve net zero emissions by 2050.



Futureproofing key export sectors



Capturing growth opportunities in new export markets



The UAE National Hydrogen strategy has set forth a clear roadmap



Thank you



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Within each overarching "step" in the roadmap the UAE has meticulously defined milestones that are crucial for successfully realizing the nation's vision.



•Policy, Regulation and Standards

Milestones

- Develop a clear regulatory framework for hydrogen
- Provide robust policy incentives to accelerate investment and confidence
- Create hydrogen-associated codes and standards
- Establish a Hydrogen Certification Scheme (guarantee of origin)



Finance and Investments

Milestones

- Provide project funding and financing to support developers in all areas of the low carbon hydrogen supply chain



Industry Development and Demand Activation

Milestones

- Activities to scale up the adoption of hydrogen
- Implementation of pilot scale and commercial scale projects to accelerate industry transition to a low carbon hydrogen
- Resources and equipment adapted or changed to support industry transition



Global Collaboration

Milestones

- Enhance institutional engagement (including government, academic, trade and industrial entities)
- Establish demand and supply partnerships for hydrogen and its derivatives
- Develop large-scale projects that can progress the development of the supply chain



Sustainable Commercial and Economic Models

Milestones

- Develop commercial models across the supply chain to provide stability and predictability for market players
- Establish a hydrogen entity that conducts consultations, helps identify and implement commercial models at the national scale.



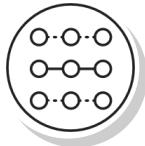
Within each overarching "step," the UAE has meticulously defined milestones that are crucial for successfully realizing the nation's vision.



Resources and Assets

Milestones

- Scale up low carbon hydrogen production, including the linking of production to renewable energy growth plans
- Consideration for hydrogen in the competition for resources, land, water, and geological assets within the energy transition



Enabling Infrastructure

Milestones

- Scale up low carbon hydrogen production, including the linking of production to renewable energy growth plans
- Consideration for hydrogen in the competition for resources, land, water, and geological assets within the energy transition



Skills and Education

Milestones

- Develop a national hydrogen workforce development plan, competency framework and training needs
- Re-skill expertise in existing industries to support the hydrogen value-chain
- Cultivate workforce to match demand due to industry uncertainties
- Response plan to support evolving technological changes and the corresponding need for rapid competency updates



Research and Innovation

Milestones

- Advance and expand hydrogen research and innovation efforts
- Increase industry-led activity and involvement
- Dedicate funding toward research and innovation
- Create the relevant institution to transition innovation from the lab to commercialisation



Climate, Safety, and Social Drivers

Milestones

- Define hydrogen's role in the UAE's Net Zero by 2050 Pathway
- Align Health and safety authorities across the emirates on key actions to deliver on the targets for H2 safety codes and standards
- Deliver public awareness on low carbon hydrogen
- Educate consumers and end-users on low carbon hydrogen

