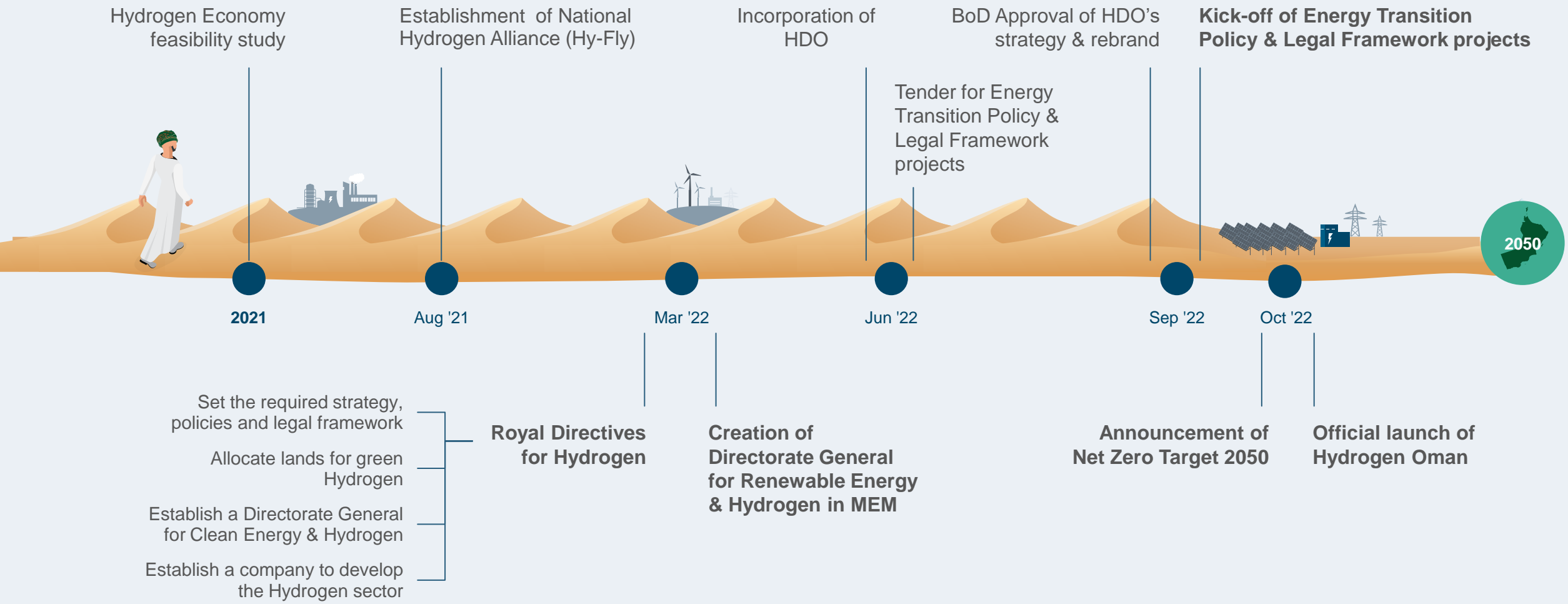




Green Hydrogen in Oman

Growing momentum for Energy Transition including Hydrogen export in Oman





01

Present Oman's ambition in green hydrogen

02

Showcase the roles in the Omani hydrogen value chain

03

Present Hydrogen Oman

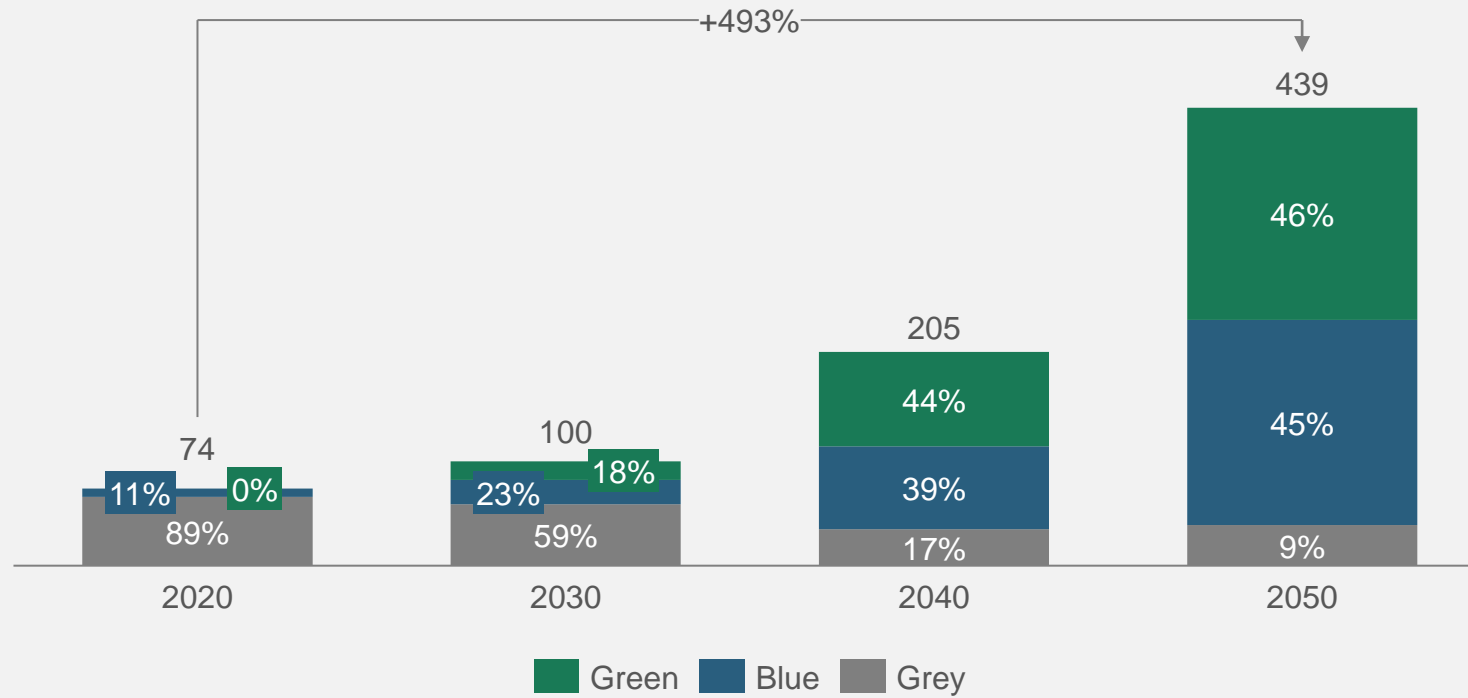
04

Outline the green hydrogen tender parameters and process



H₂ today fully fossil-based, but significant low-carbon hydrogen penetration and growth to come in next decades

Global hydrogen production (Mtpa)



~200 Mtpa

green hydrogen production
expected by 2050

- > Strong market momentum, with 900+ projects in pipeline
- > Only 1% of the announced projects at a mature stage

1. Hydrogen-derivative fuels are normalized to hydrogen equivalent 2. Production technology split & grey production volume taken from IEA SDS global hydrogen production forecast (last updated in Sep 2020) in SDS scenario; Green & blue volumes based on BCG Global H₂ demand tool; Note: scenario used SDS = Sustainable Development Scenario
Source: IEA; Irena; BCG Global H₂ Demand Model – Feb 2022 (updated for RePowerEU latest announcements)



25+ countries have released hydrogen ambition



Key learnings from low-carbon H₂ country strategies



Decarbonizing industry as first priority

Most actionable change in the short-run is replacing grey H₂ in industry with low-carbon H₂



Targets and policies centered around supply

Supply targets being set (e.g., X GW of electrolyzers by 2030), while demand support largely lacking



Creation of hydrogen clusters

Large demand clusters can springboard H₂ industry via economies of scale & sector coupling synergies

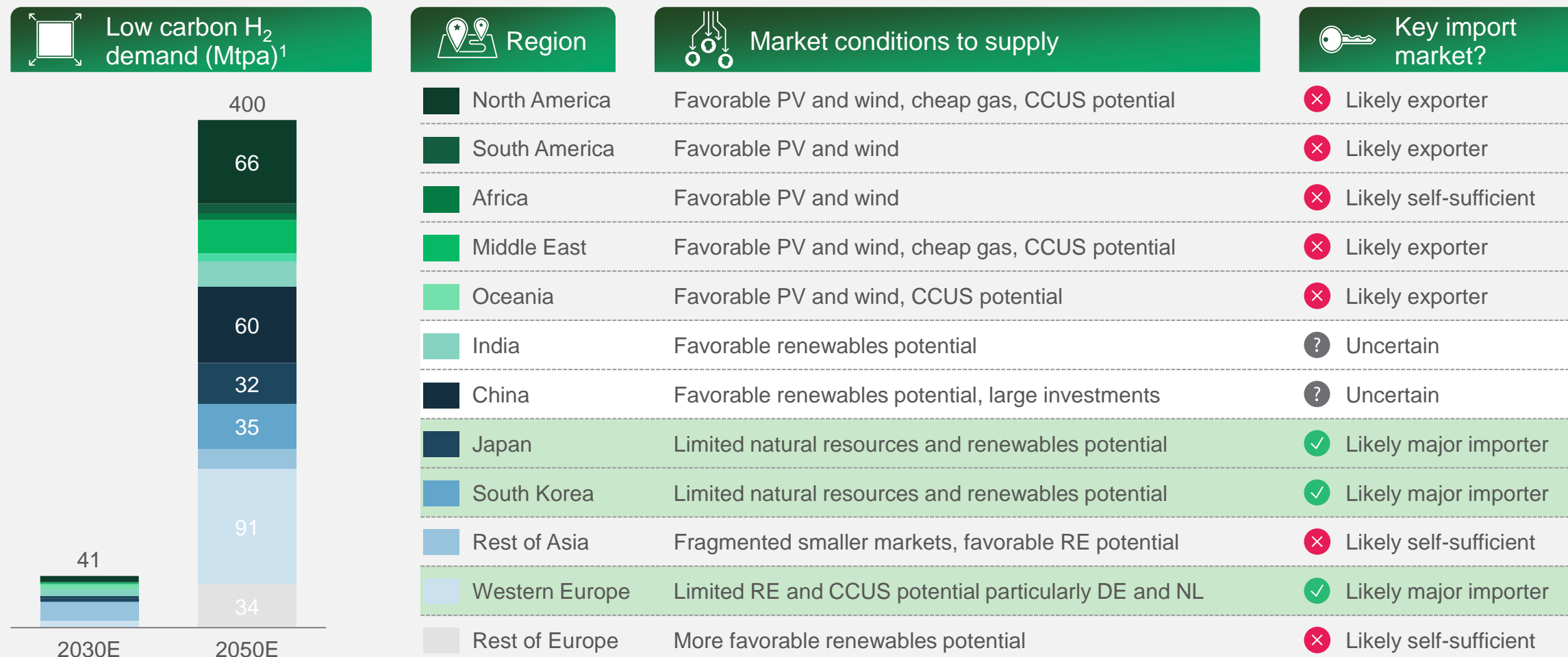


Growing international cooperation

Bilateral agreements allow for knowledge sharing and de-risking national hydrogen investments



Japan, Korea and Western Europe likely importers of low-carbon H₂ due to limited renewable potential



1. Hydrogen-derivative fuels are normalized to hydrogen equivalent. Note: scenario used SDS = Sustainable Development Scenario
Source: IEA World Energy Balances; IEA WEO 2021; GlobalData; Nexant

Oman has 5 strategic objectives to move into Green H₂



Ensure **energy security** on a national and International level



Diversify the local economy, onshore the supply chain, forward connect industries and create local long-term jobs



Decarbonize the country to safeguard a sustainable future for incoming opportunities



Create a Green H₂ sector with a **competitive LCOH for export markets** and attractive for Foreign Direct **Investments**



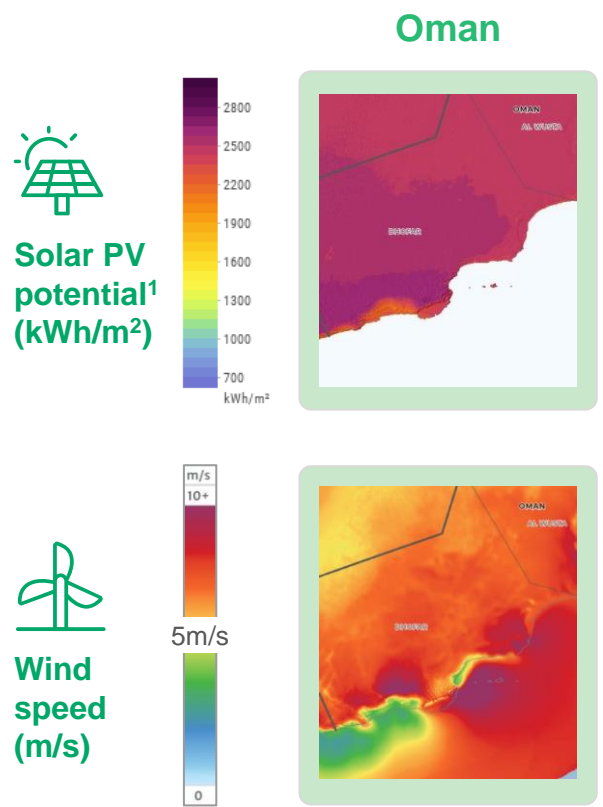
Support **innovation** and ensure capabilities development for Oman

3 zones in Central/South Oman have been chosen to develop Green H₂

Zones

- Duqm
- Dhofar
- Al-Jazir

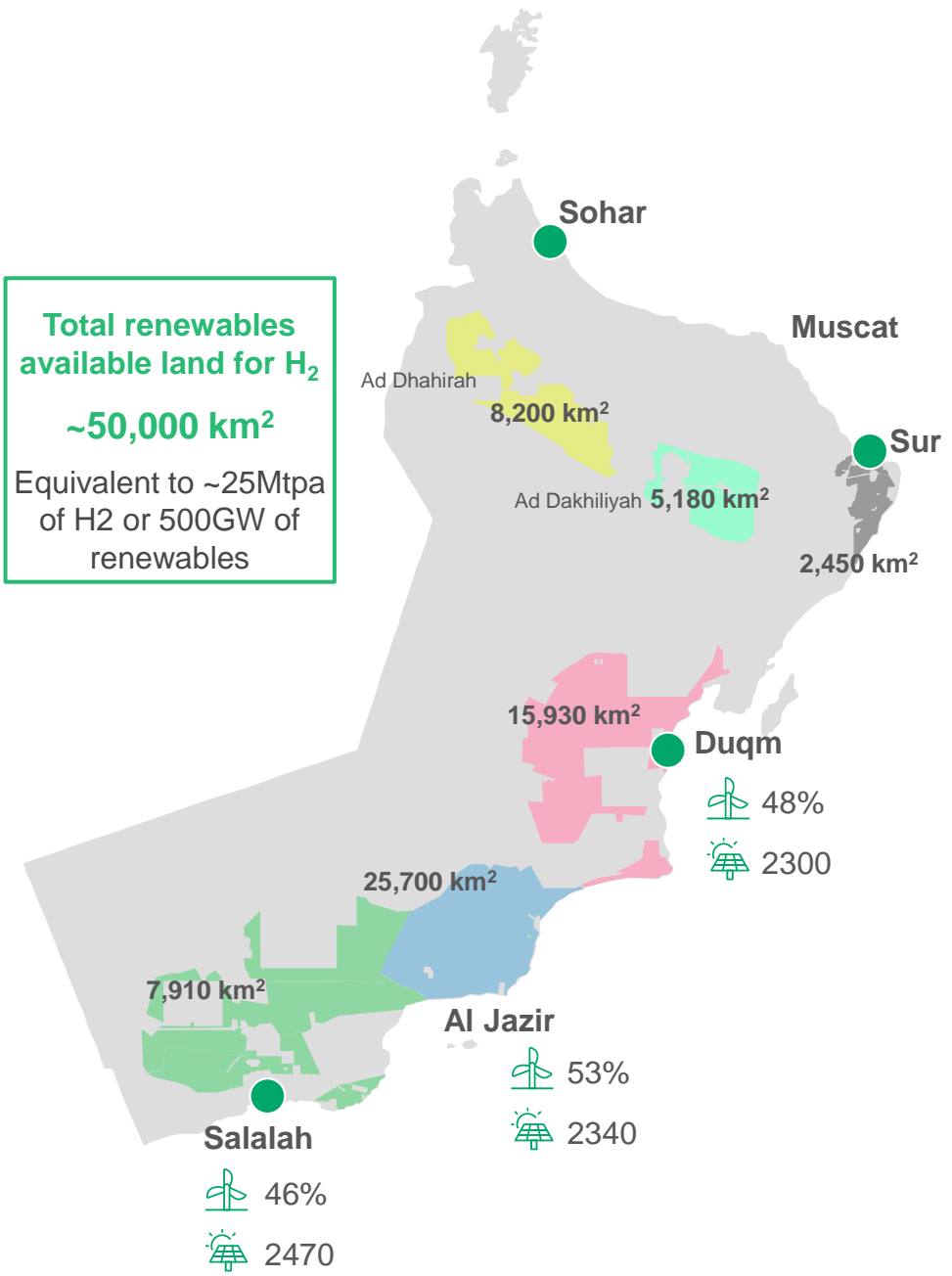
1. Highest wind potential areas mapped at 200m
Source: Global Wind Atlas, Global Solar Atlas



Areas for Renewables across Oman

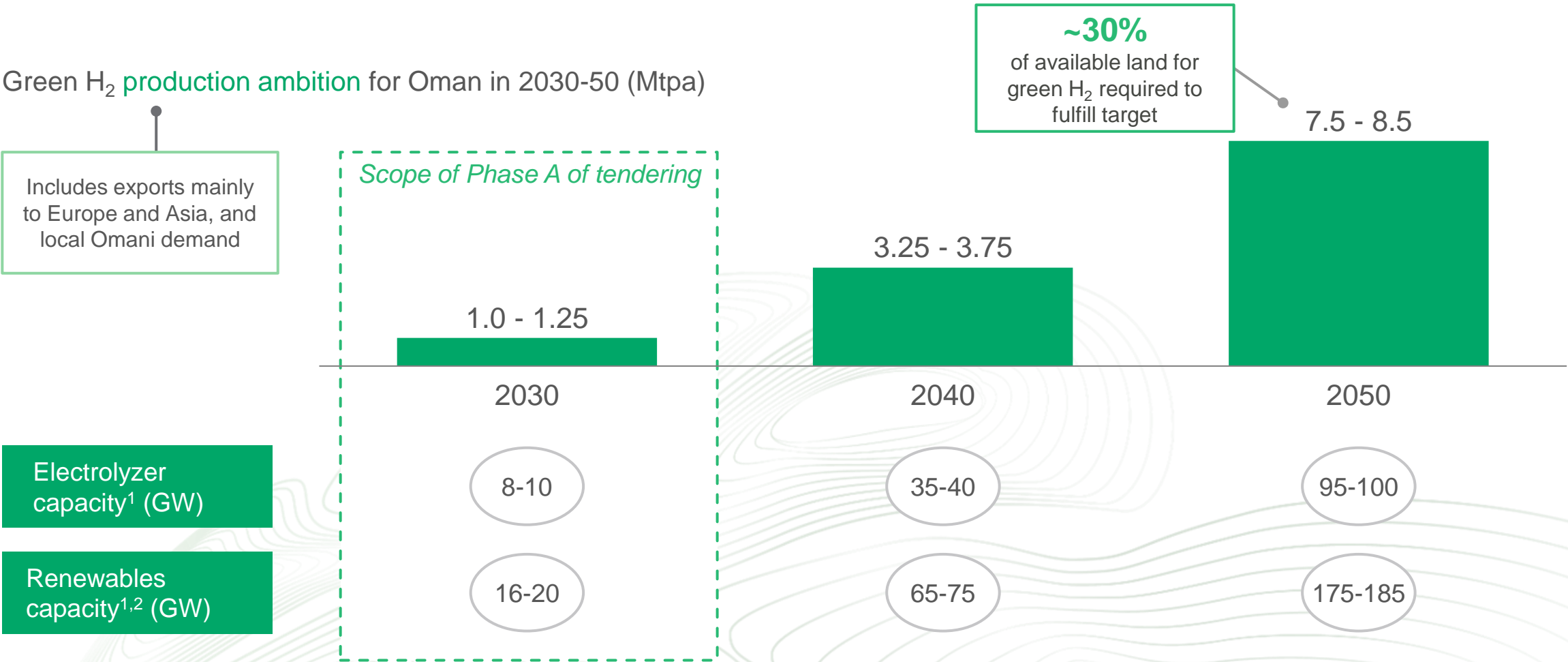
- xx Total renewable land area
- Industrial or commercial ports
- 🌿 Wind capacity factor (%)
- ☀️ Solar irradiation¹ (kWh/m²)

Total renewables available land for H₂
~50,000 km²
Equivalent to ~25Mtpa of H₂ or 500GW of renewables



1. Global Horizontal Irradiation (GHI)
Source: Global solar atlas, Global wind atlas (July '22)

Oman has ambitious production targets until 2050, to cover both export and local demand – scope of Phase A of tendering is to fulfil 2030 ambition



1. Approximate values for Duqm, Oman 2. Includes 25% buffer over Renewables needed for electrolyzers to account for Balance of plant load (which includes NH₃ synthesis loop, Storage tanks for H₂/NH₃, other auxiliary facilities load). Assumption: Sustainable Development Scenario (2°C). Source: Team analysis

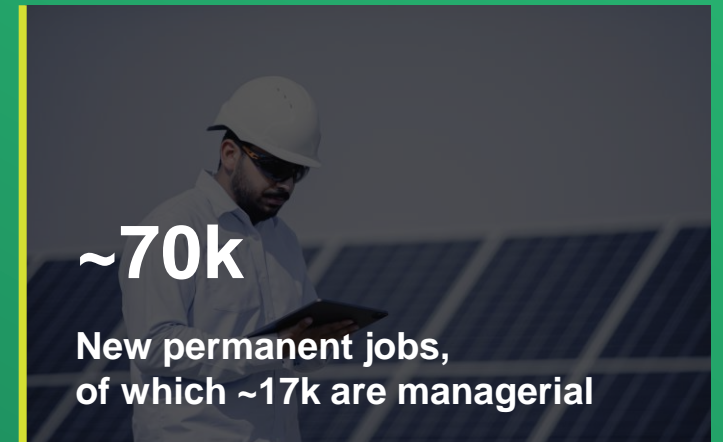
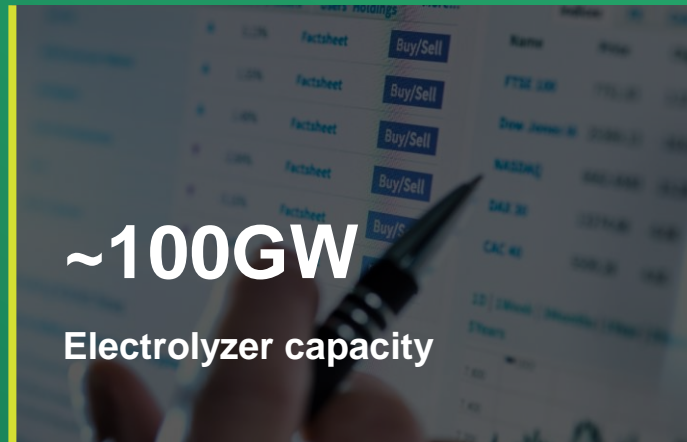
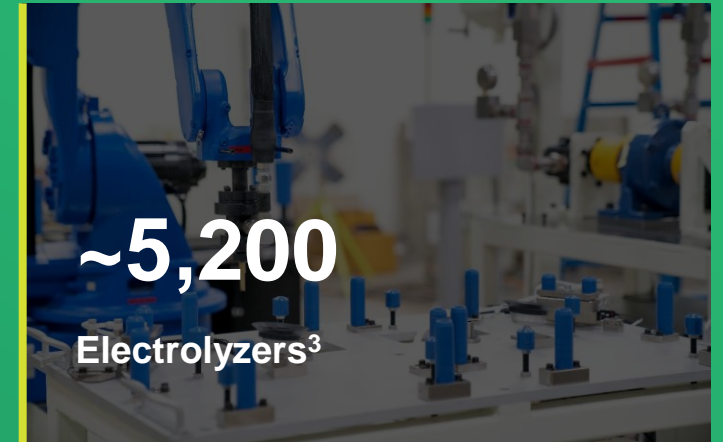
Cumulative investments by 2050
required in Oman Green H₂ Economy

~\$140B






~OMR 54B

Investments
required in solar
panels, wind
turbines,
electrolyzers,
derivative
synthesis, storage,
transport, water
desalination, etc.

Oman plans massive capacity installation and investments in the green H₂ sector by 2050



Key project parameters have been defined

Parameter	Detail
 Duration	<ul style="list-style-type: none">47 years from project development and land sub-usufruct award
 Oman take	<ul style="list-style-type: none">Land lease (floor of 20 bz/m² ≈ 0.05 USD)Base royalties (floor of 5% in kind) and surplus royaltiesCorporate tax appliesEquity stake 20% for Government owned entity <div>Further details will be disclosed in the RFQ, bidders can propose more</div>
 Incentives	<ul style="list-style-type: none">Developers can expect incentives as reduced land fees to 20bz/m² which are further discounted during development stages by up to 100%
 Scope	<ul style="list-style-type: none">Integrated project to produce Green H₂ derivatives (includes Renewables generation, H₂ production, derivatives conversion, off-take)Common infrastructure to be tendered separately
 Conditions	<ul style="list-style-type: none">No committed off-take of electricity/connection to gridUnused land to be given back to Government

Objectives of the presentation

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Present Oman's ambition in green hydrogen

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Showcase the roles in the Omani hydrogen value chain

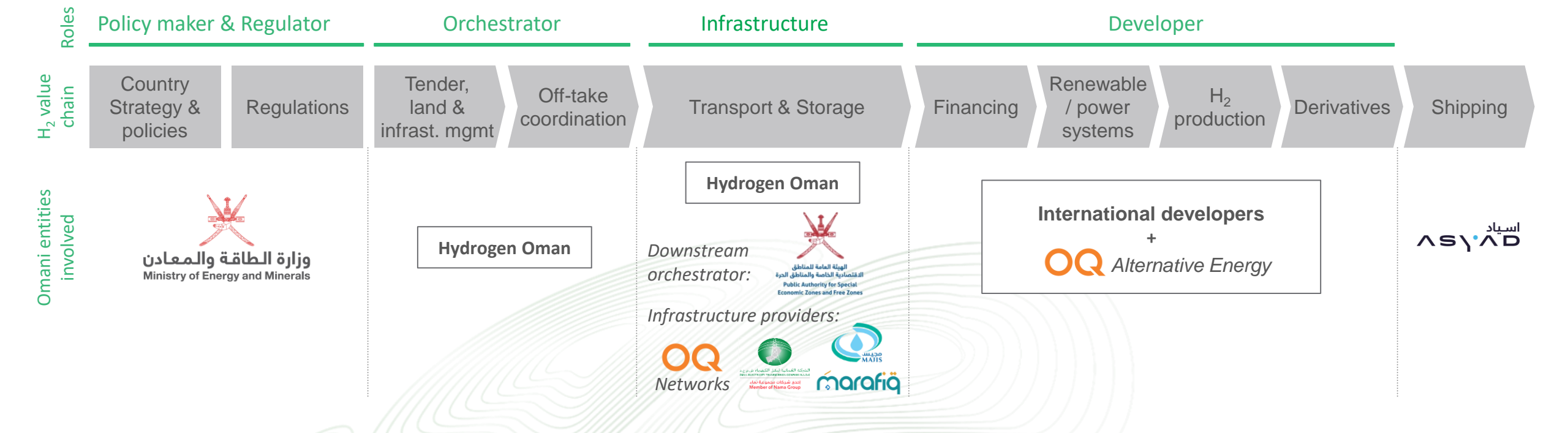
03

Present Hydrogen Oman

04

Outline the green hydrogen tender parameters and process

Four different roles to drive the Hydrogen economy in Oman, performed by different Omani entities



Hydrogen sector connects with many industries and current Omani companies

Thank you

