



2026

EUROPEAN HYDROGEN ENERGY CONFERENCE

SEVILLE

11th · 13th March 2026

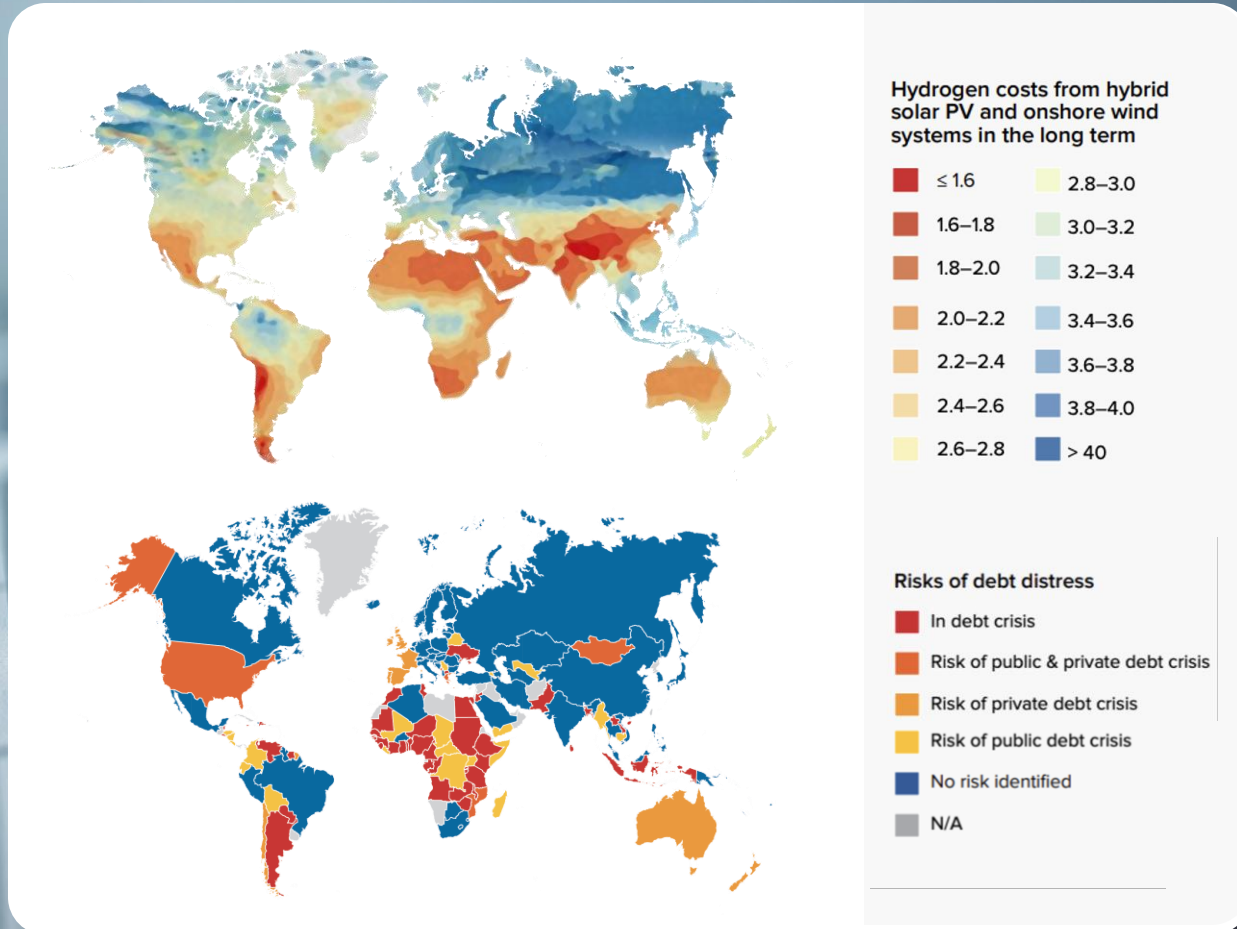
Plenary Session 3: Aligning Green Hydrogen with People, Planet, and Prosperity



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Sustainable
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Hub



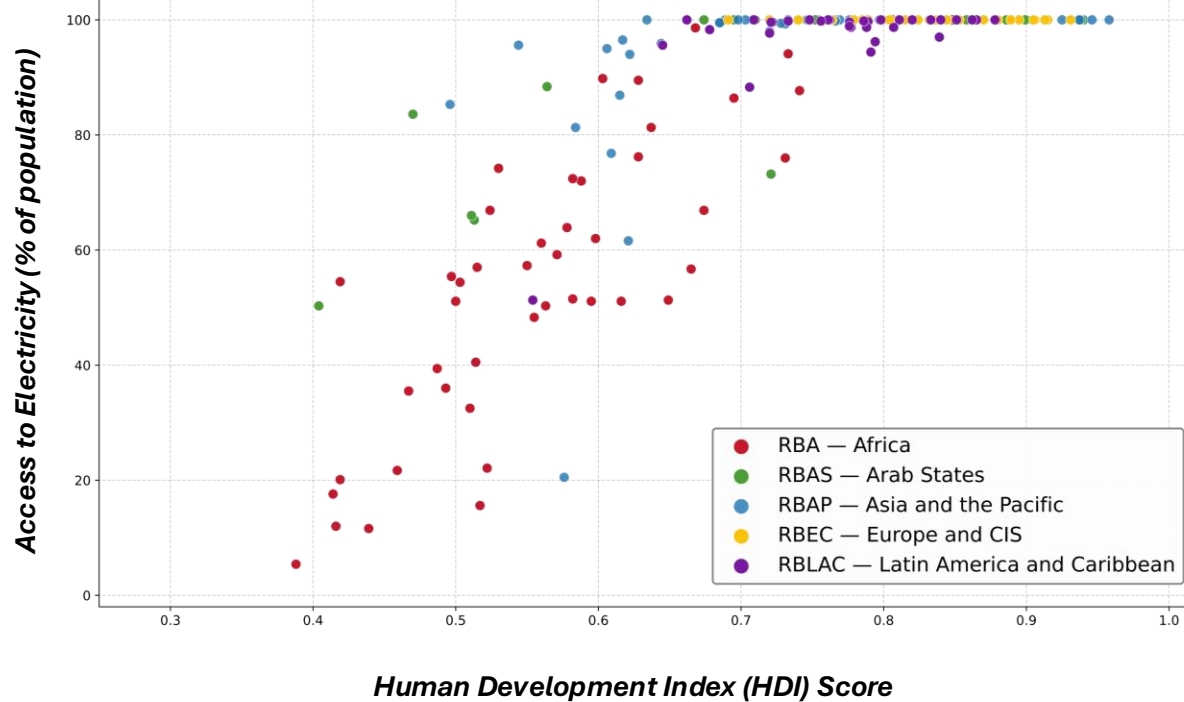


Countries with the lowest production costs often face the highest debt distress risks
(Source : Debt Justice Data Portal, IEA)



Green hydrogen is gaining momentum, but who benefits from the transition?

- 95–100 Mt of hydrogen demand today; <1% is low-carbon
- Demand could reach 430+ Mt by 2050; 71% in major economies
- €1–1.5/kg cost potential across parts of the Global South
- Yet 83% of investment is concentrated in Europe and China

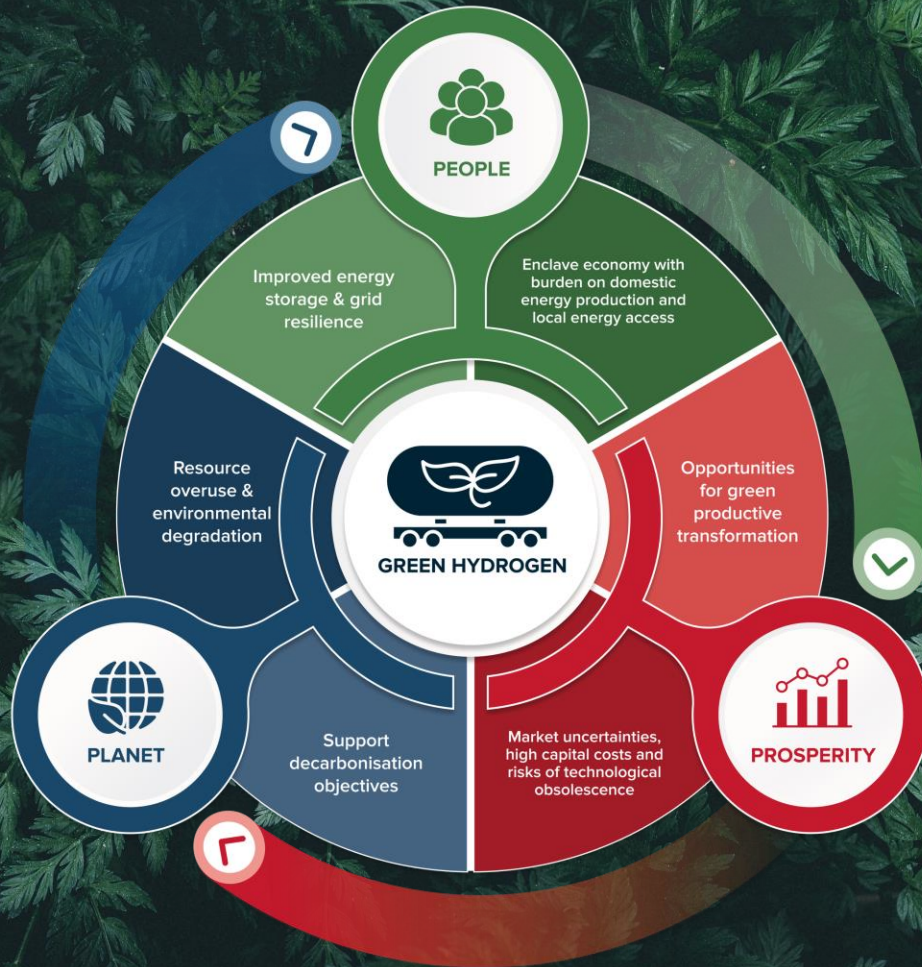


HDI vs electricity access chart
(Source : 2025 UNDP Human Development Index (HDI) and Worldbank)



Hydrogen must first serve national development gains and energy security

- 58 countries and 2 regional organisations have hydrogen strategies
- Hydrogen can support energy security, jobs, and industry
- Namibia: 56% electrification; 7 GW renewables for 3 GW electrolysers
- At \$4.5–12/kg, export-led projects can become energy enclaves



UNDP's 3P Framework



A 3P framework can align green hydrogen with sustainable development

- Hydrogen must be assessed beyond technical feasibility and market potential
- People: energy access, jobs, and local skills
- Planet: water, land, and biodiversity
- Prosperity: domestic value chains and inclusive growth



Chile



Namibia



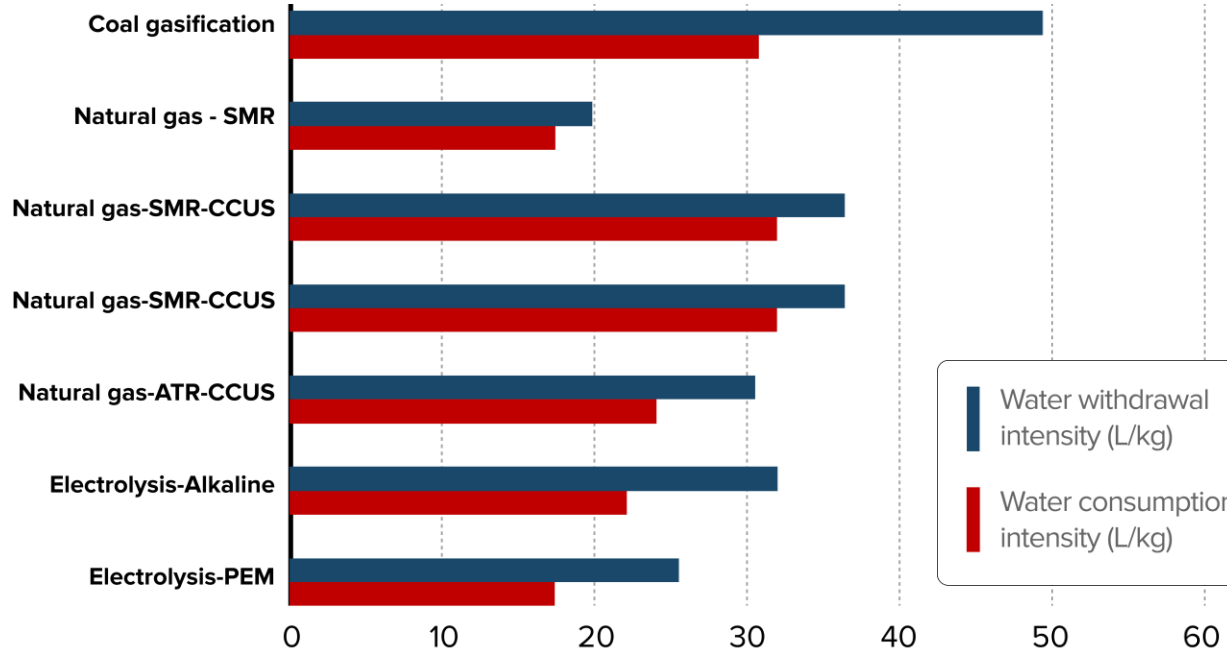
India



PEOPLE: Hydrogen must improve human capital and energy access

Examples already shown this potential:

- Namibia: 56% electrification; 7 GW renewables for 3 GW electrolysers
- Chile: 100,000+ jobs; Namibia: 15,000 construction jobs & 3,000 operations jobs
- India: 5 Mt by 2030, 500,000 jobs, 125 GW enabled

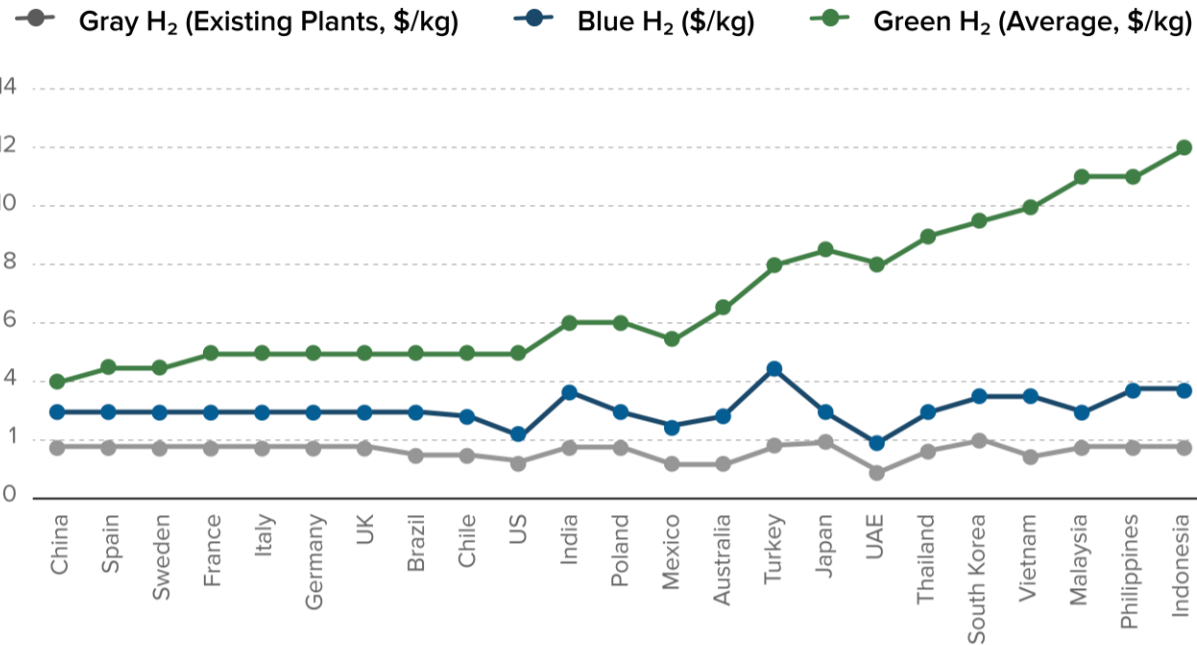


A summary of water withdrawal and consumption intensities by hydrogen production technology
(Source : IRENA 2023)



PLANET: Hydrogen expansion must operate within environmental & climate limits

- 30,000 ha of solar panels may be needed per 1 Mt of hydrogen
- 70% of planned electrolyser capacity is in water-stressed regions
- 2 Mt of hydrogen can require 18 million m³ of water
- Hydrogen also depends on critical minerals, with value chains still highly unequal



Estimated differentials in the levelized cost of hydrogen by energy source and market (UNDP, 2025, based on BloombergNEF data)



PROSPERITY: Financing hydrogen must generate inclusive economic growth

- Green hydrogen still costs \$4.5–12/kg
- Cost gaps range from < \$4/kg to > \$7/kg across markets
- Abatement costs are \$500–1,250 per ton of CO₂
- Finance alone does not ensure inclusive growth

NAVIGATING THE CURRENTS OF GREEN HYDROGEN

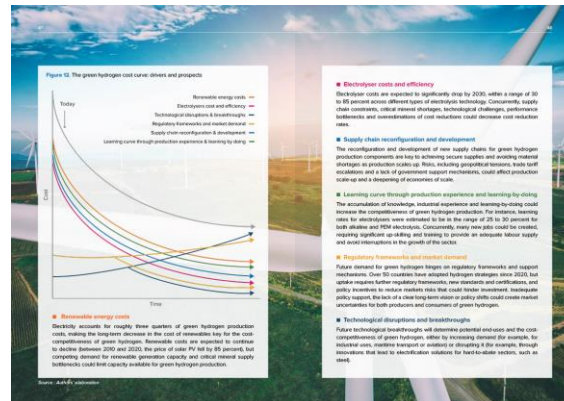
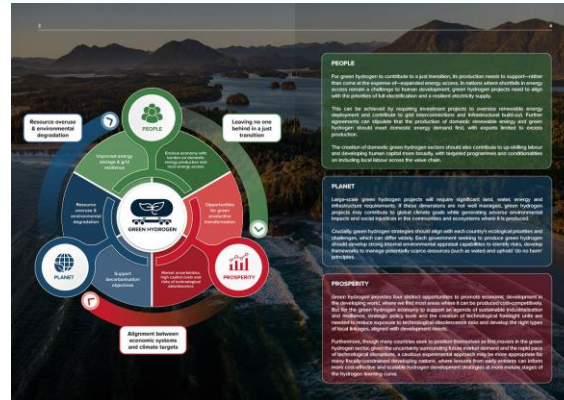
TOWARDS A HUMAN DEVELOPMENT-CENTRED FRAMEWORK



Knowledge Partners



SEPTEMBER 2025



PEOPLE	PLANET	PROSPERITY
<p>OPPORTUNITY</p> <ul style="list-style-type: none"> Expanding energy access, an essential SDG indicator, people in the world still lack access to electricity, and the green hydrogen value chain offers a promising pathway to address this challenge. Creating new jobs and opportunities in the green hydrogen value chain. <p>CHALLENGE</p> <ul style="list-style-type: none"> Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks. Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks. 	<p>OPPORTUNITY</p> <ul style="list-style-type: none"> Decarbonisation of energy-intensive sectors, such as steel, cement, and aviation, is essential for achieving net-zero emissions. Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks. <p>CHALLENGE</p> <ul style="list-style-type: none"> Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks. Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks. 	<p>OPPORTUNITY</p> <ul style="list-style-type: none"> New jobs and opportunities in the green hydrogen value chain. Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks. <p>CHALLENGE</p> <ul style="list-style-type: none"> Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks. Large-scale green hydrogen projects will require significant land, water, energy and materials. They should be carefully addressed to avoid environmental and social risks.



UNDP helps countries align green hydrogen with People, Planet, and Prosperity

- UNDP and the Oxford TIDE Centre's 3P framework helps align hydrogen with people, planet, and prosperity
- UNDP supports regulation, permitting, and investment design
- The transition must centre people and ecosystems



Thank You!

For further information, please contact:

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