

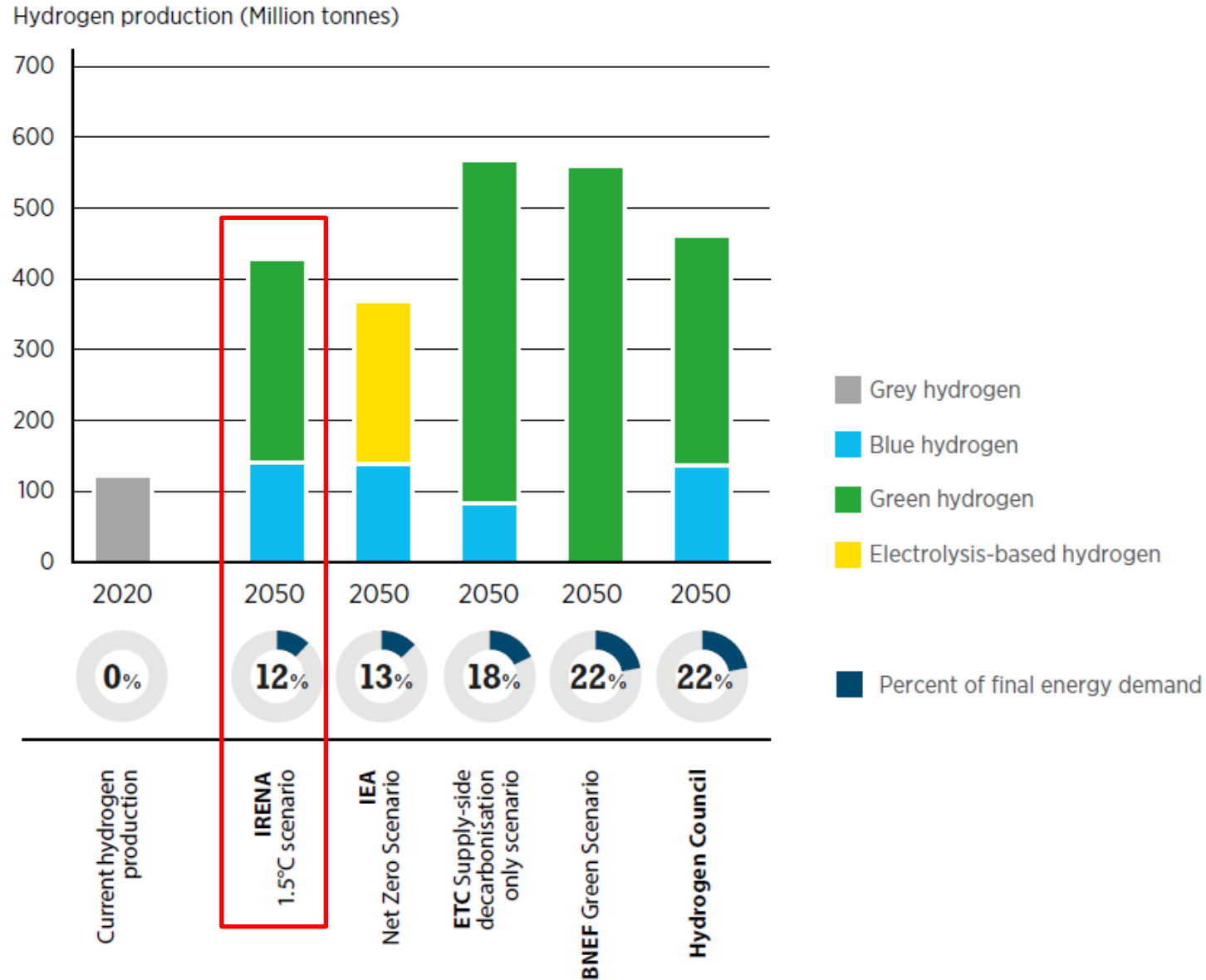
Geopolitics of Energy Transformation: *The Hydrogen Factor*

Ben Gibson

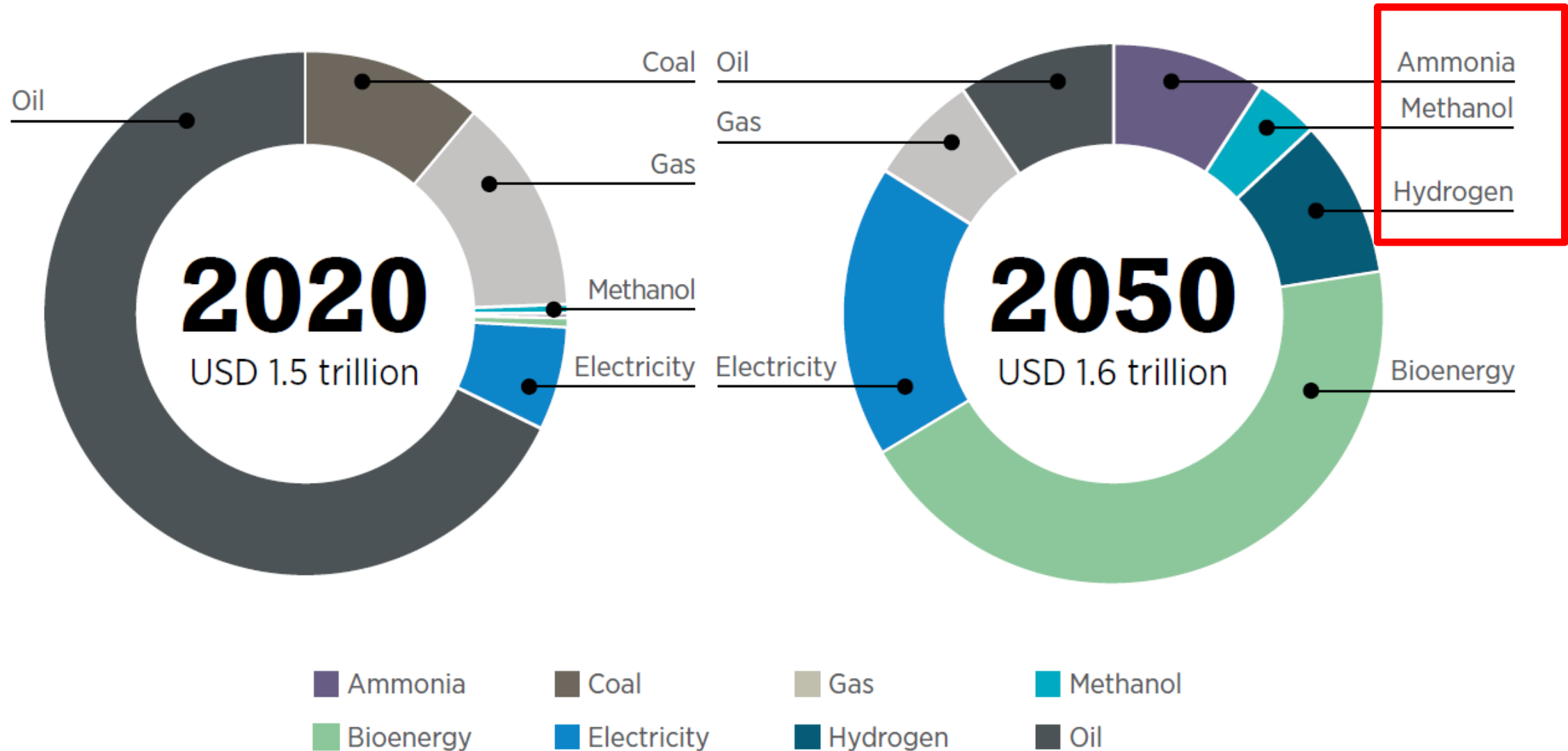
Programme Officer – Geopolitics

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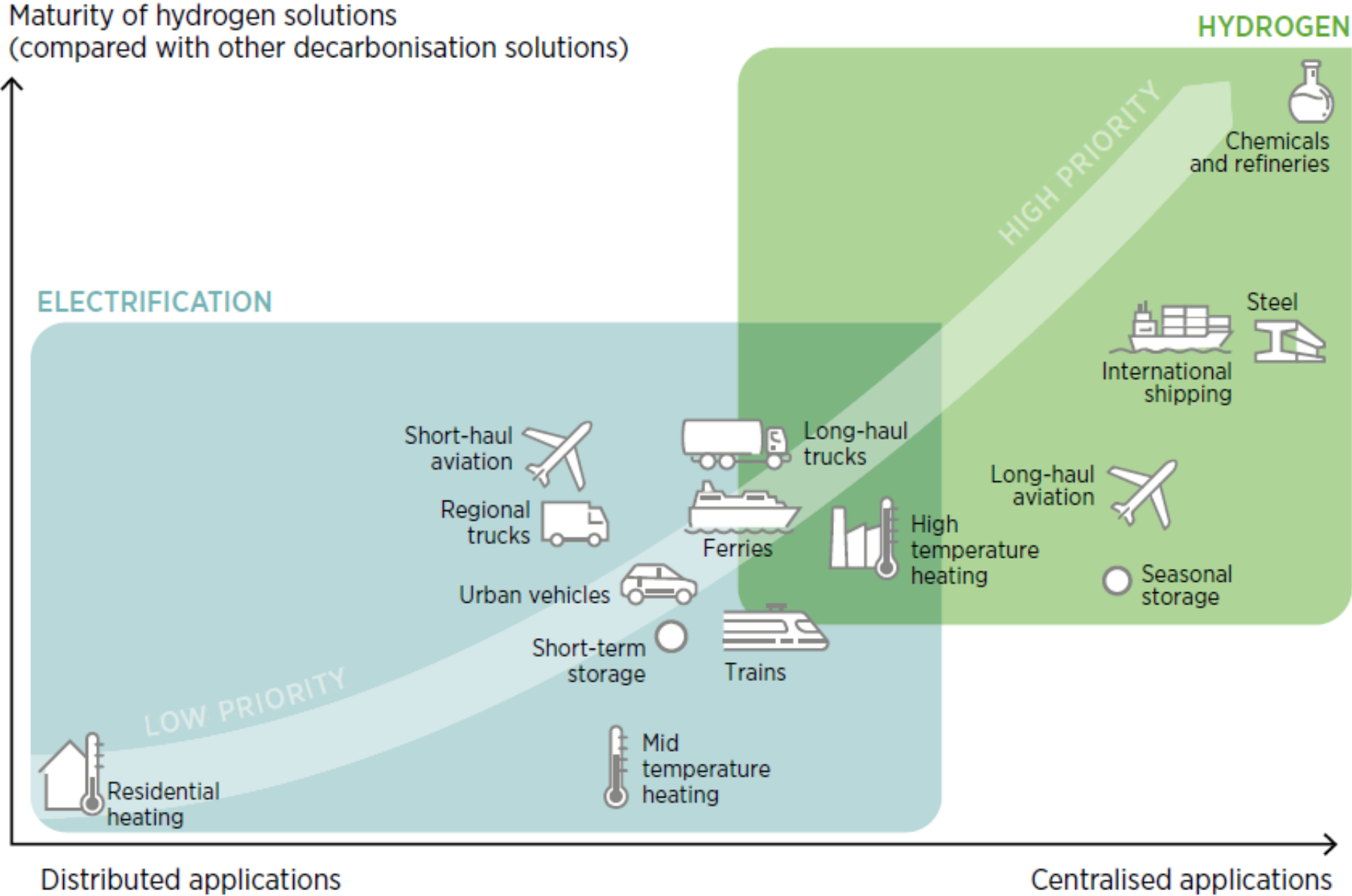
Hydrogen demand could grow 5X or more by 2050



Hydrogen and its derivatives could grow from negligible amounts today to 20% of global trade in energy commodities by 2050



Clean hydrogen sectoral priorities

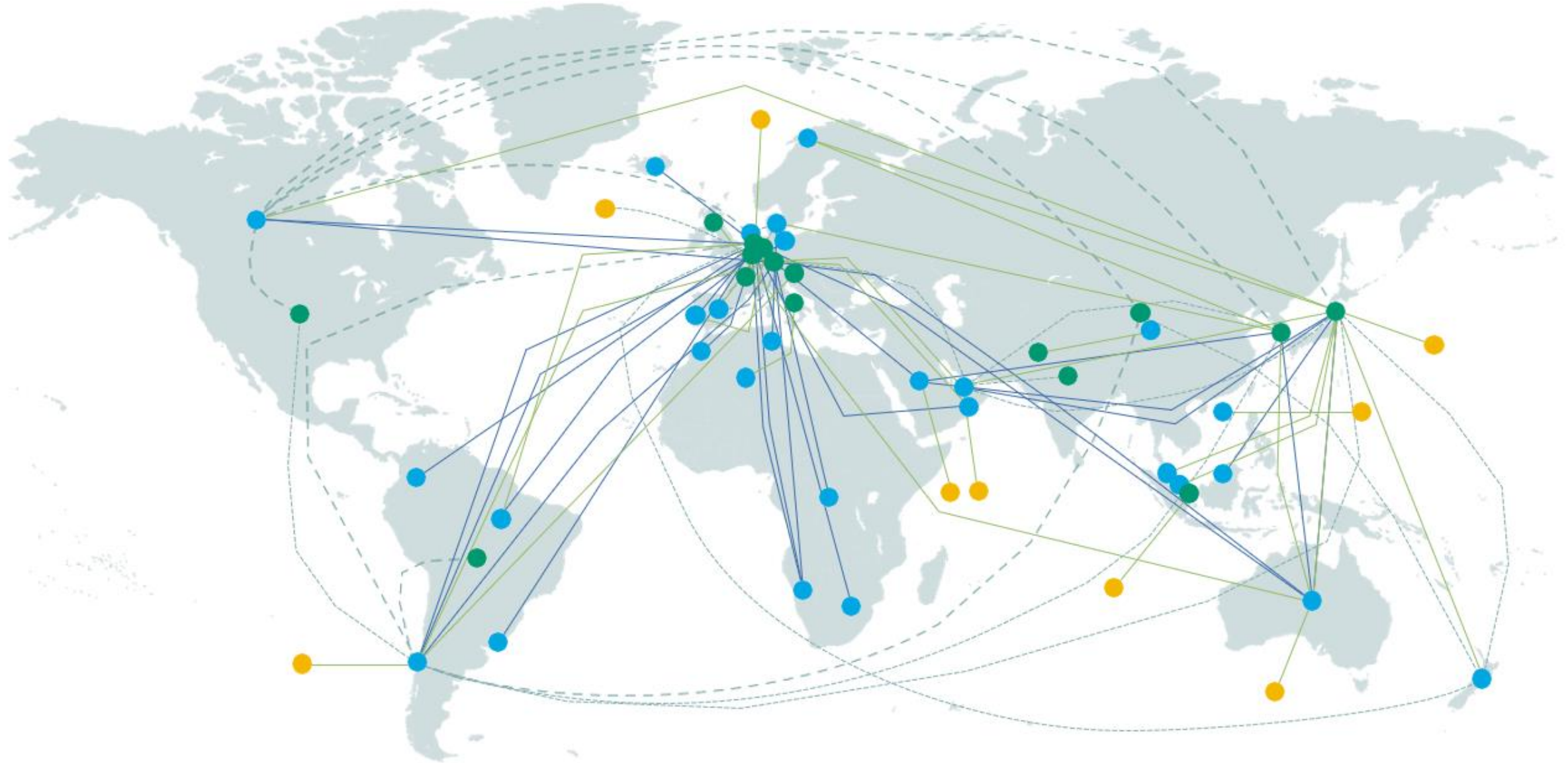


Emerging national hydrogen strategies and initiatives



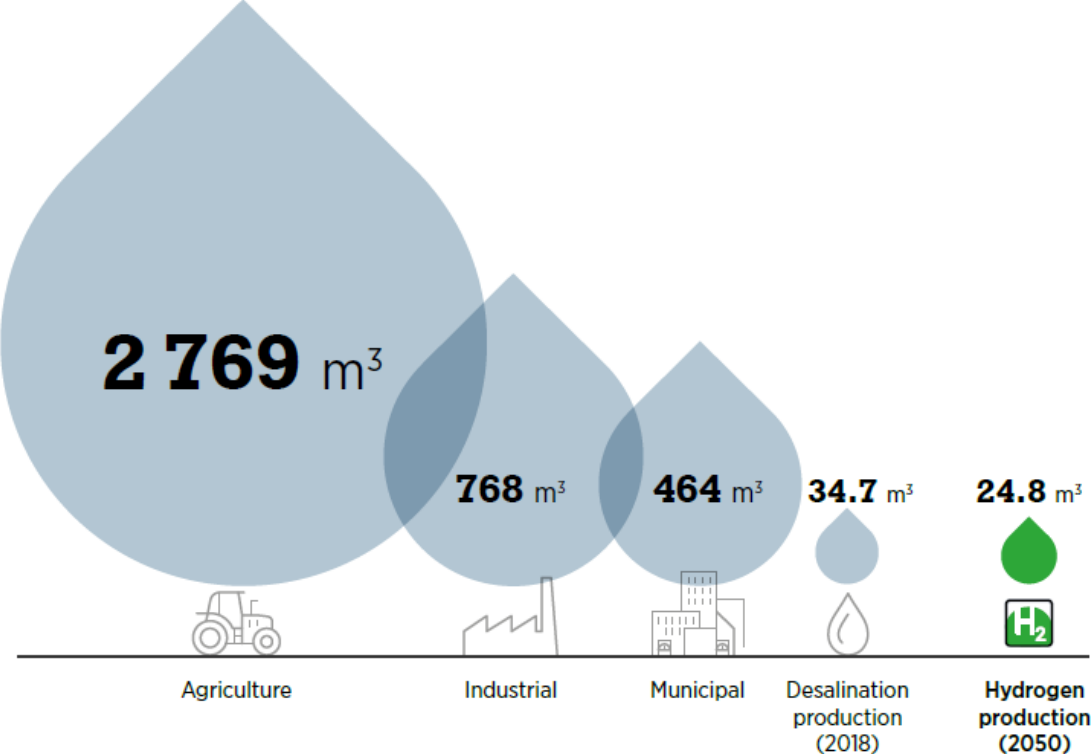
Being drafted
Published

An expanding network of hydrogen trade routes, plans and agreements

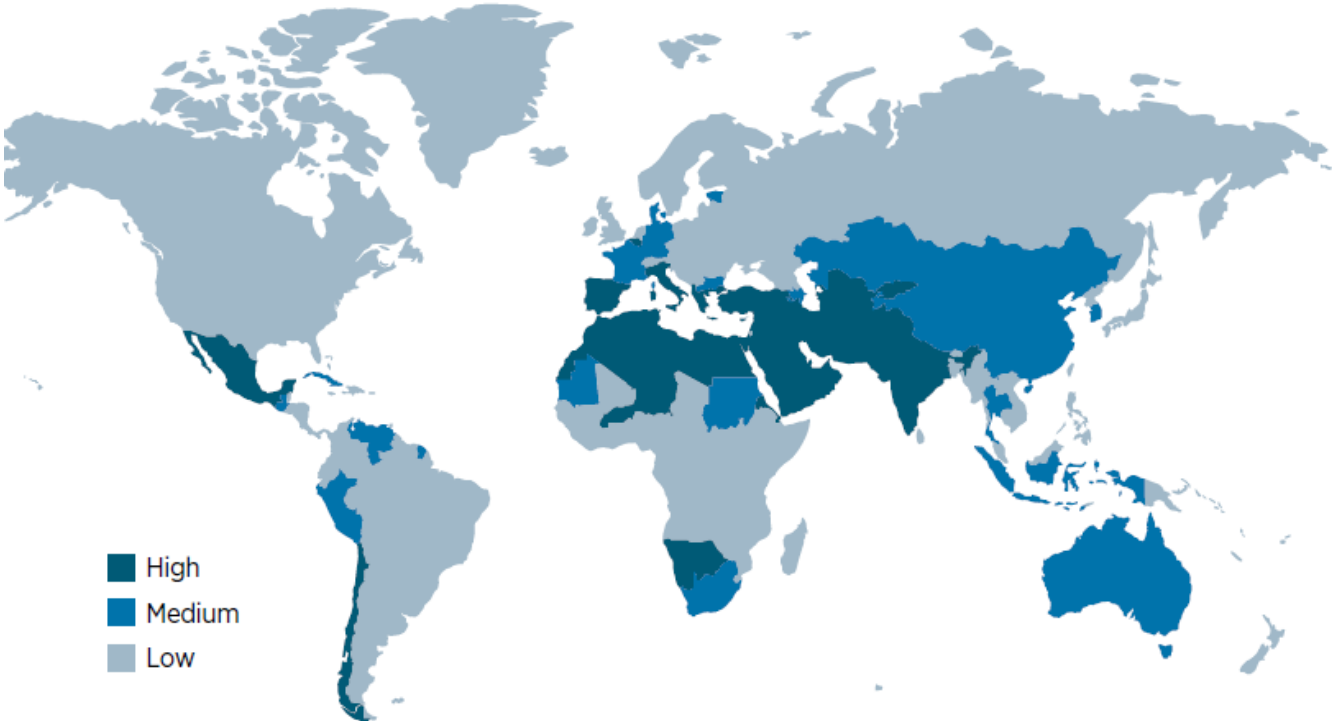


● Import ● Export ● Undefined trade partner — Public/public — Private/private - - - Routes mentioned in strategies

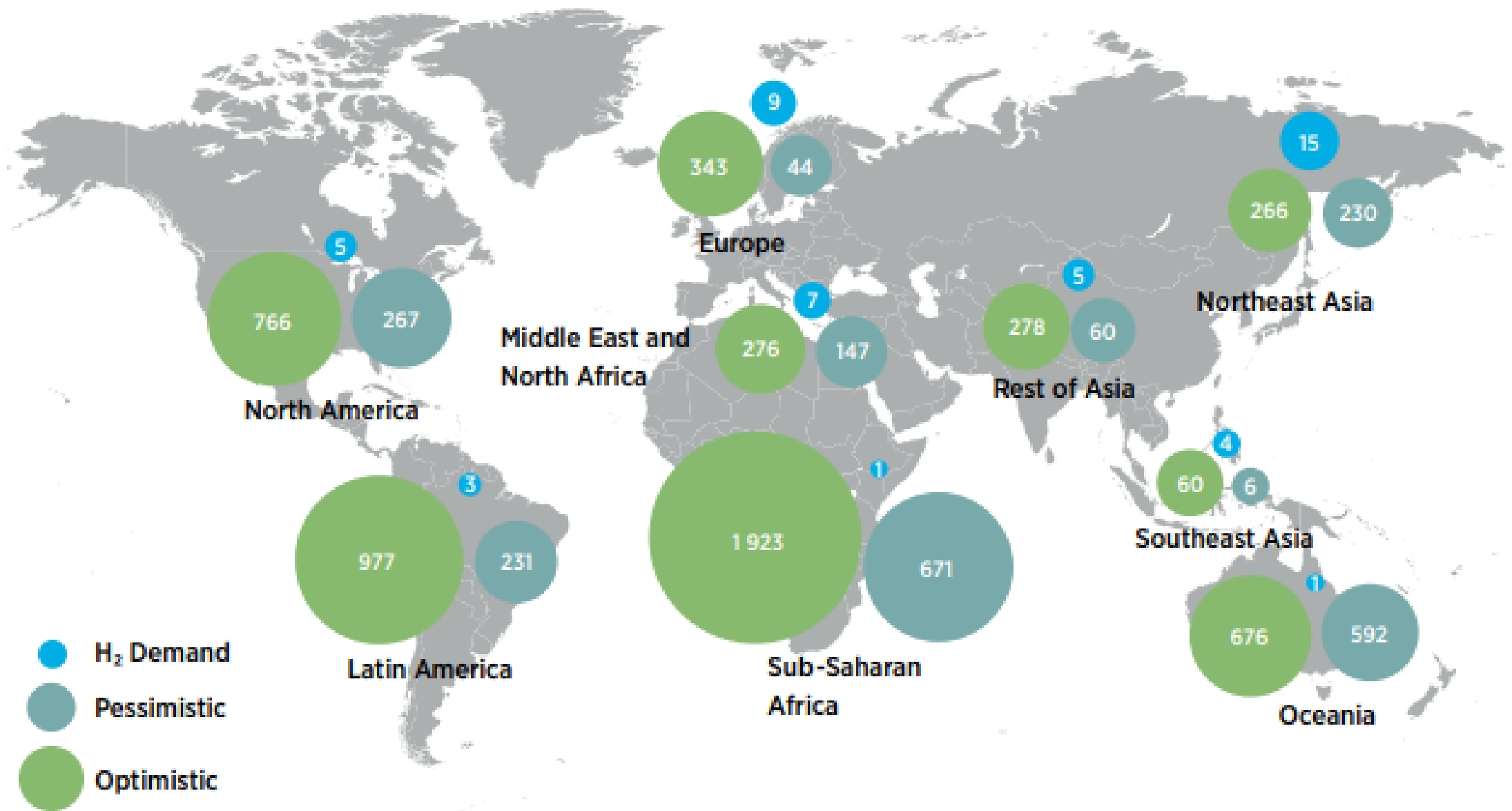
Water consumption of hydrogen in 2050 compared with selected sectors today (bn m³)



Map of water stress levels



Comparison between economic potential of green hydrogen supply below USD 2/kgH₂ and forecasted hydrogen demand, in EJ/year, in 2050



- Hydrogen is part of a much bigger energy transition picture, and its development and deployment strategies should not be pursued in isolation.
- Setting the right priorities for hydrogen use will be essential for rapid scale-up and long-term contribution to decarbonisation efforts.
- International co-operation will be necessary to devise a transparent hydrogen market with coherent standards.
- Policy makers should consider broader impacts of hydrogen scale-up on sustainable development to ensure positive, long-lasting outcomes.
- Investment in renewable energy and green hydrogen in emerging economies can contribute to economic growth and stability.
- National strategies, trade agreements, and regulatory schemes can provide signals about hydrogen's role in LTES (e.g., grid integration, sectoral priorities).



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