Hysata

Green hydrogen. Efficiency wins.

Technology and company overview

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Hysata is aiming to make a substantial contribution to addressing the climate crisis by delivering the world's best electrolyser.

Vision

An accelerated global shift from fossil fuels to green hydrogen

Mission

To deliver the world's most efficient, simple and reliable electrolyser

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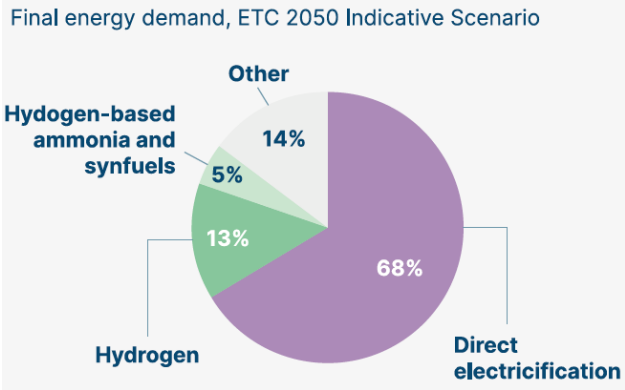
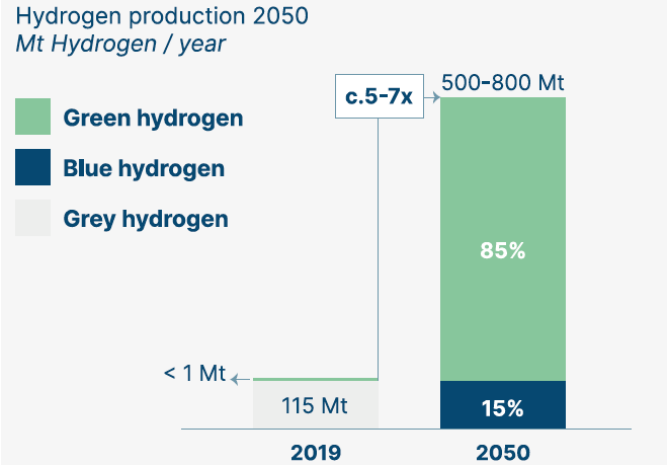
Hydrogen essential for net zero; electrolysers are a key technology.

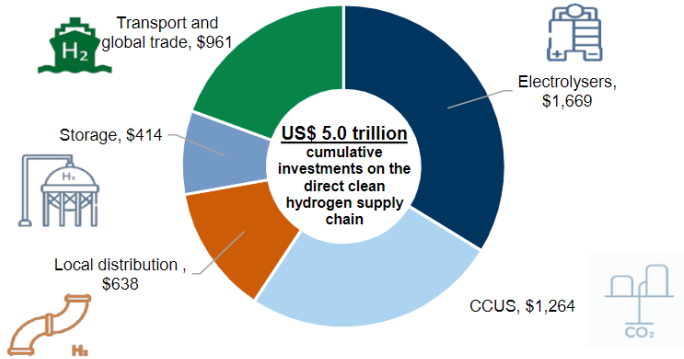
Hydrogen: the second decarbonisation vector



5-7x increase in H_2 production for net zero



US$ 1.7 T investment in electrolysers needed



Source: "Making the Hydrogen Economy Possible", Energy Transitions Commission, April 2021; Carbonomics – The clean hydrogen revolution, Goldman Sachs, February 2022

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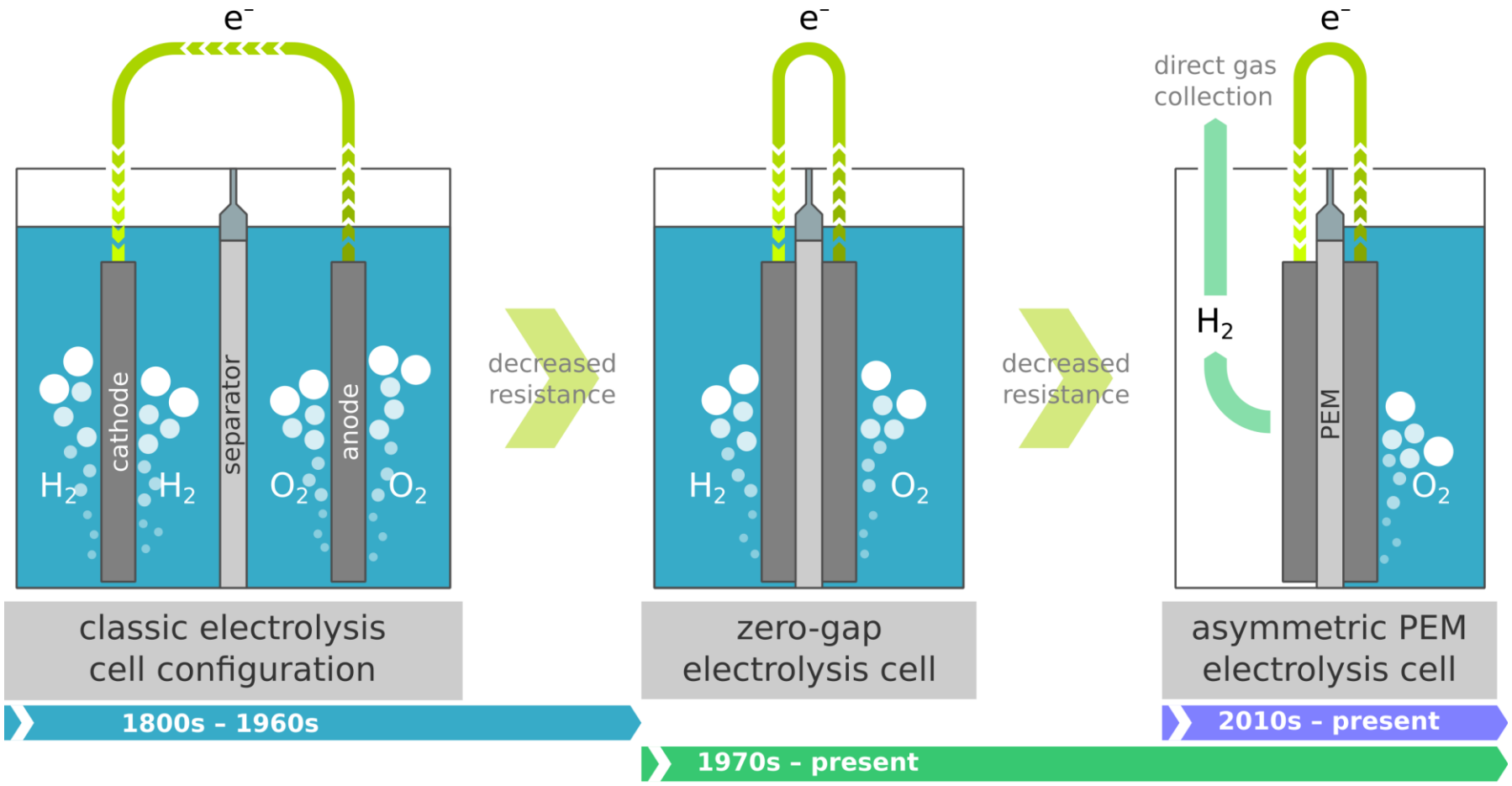
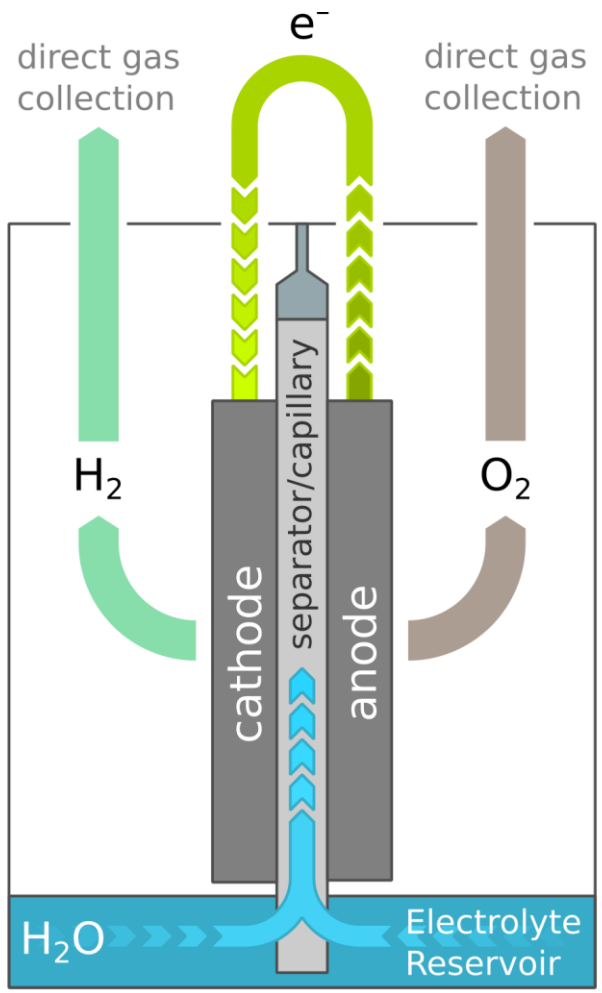
Hysata technology offers step-change improvements in 3 key areas

Existing electrolysers	Hysata
75% efficient – waste 25% of the input electricity as heat	New category of electrolysis with world's best efficiency: 95% (41.5 kWh/kg)
Complex, expensive balance of plant	Simplified, low-cost balance of plant
Emerging from a cottage industry. Not designed for GWs	Ease of manufacturing and scaling; designed for GW scale

The evolution of electrolysers.



Next generation electrolyser - 'Capillary-Fed Electrolysis' (CFE)



Capillary-Fed Electrolysis (CFE) Cell

- Highest performing cell globally
  - High cell efficiency enables Balance of plant simplification
  - 41.5 kWh/kg system efficiency
- Core technology
  - Publication in Nature Communication (March 2022)
  - Foundational intellectual property

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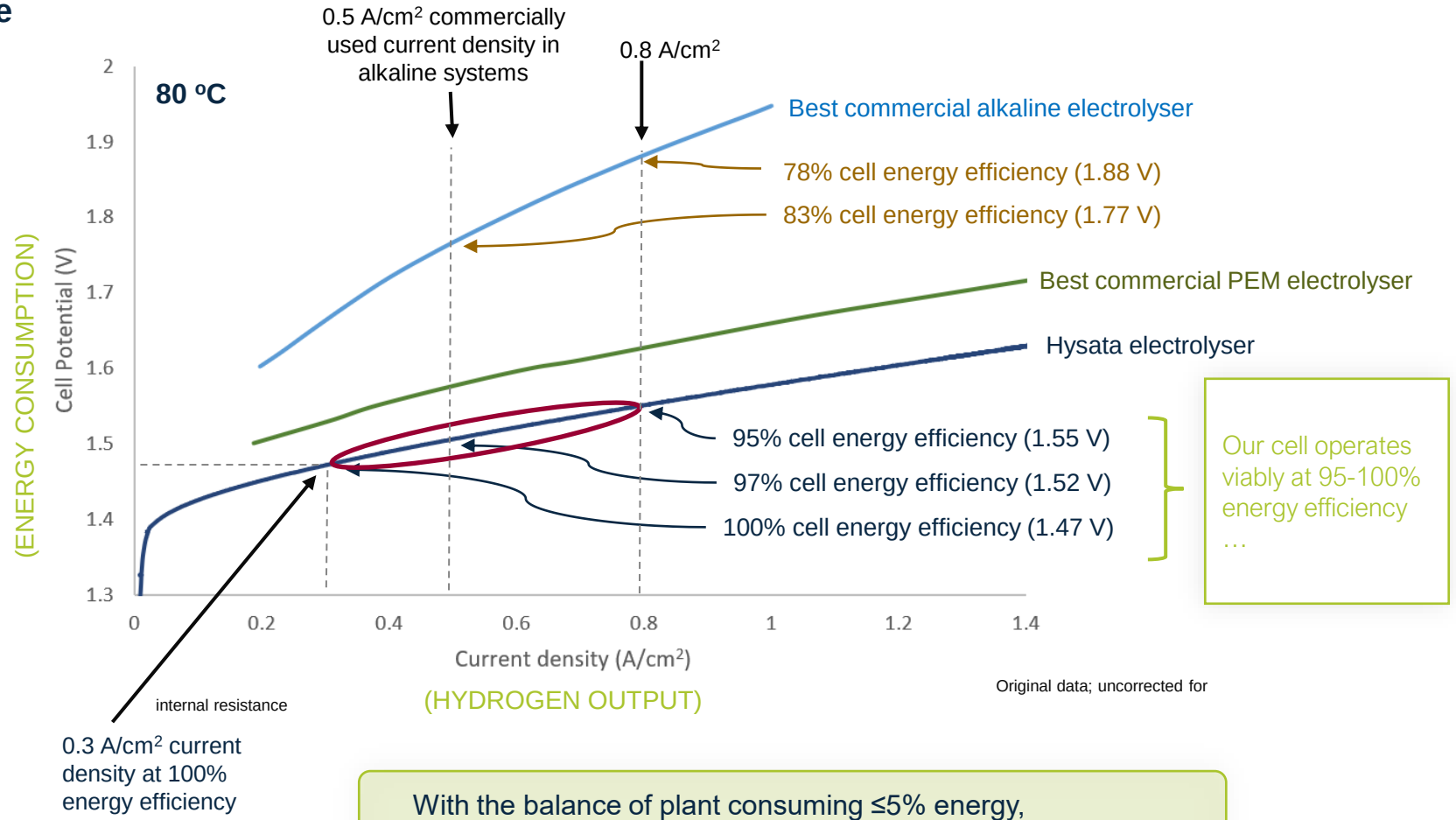
Our cell outperforms existing alkaline and PEM by a margin.

VI Curve



With the balance of plant consuming ≤5% energy,
an overall (system) energy efficiency of ~95% is possible …

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Hysata's revolutionary CFE cell unlocks balance of plant simplification.

High cell efficiency (98%)	→	No chiller
Bubble-free gas generation	→	No separator
No electrolyte loop	→	Low-power pumps
No shunt currents	→	Efficient, low-cost power electronics
Can pressurise to 30+ bar	→	Compressors reduced or eliminated

Net result: simple, cheap, efficient and reliable balance of plant

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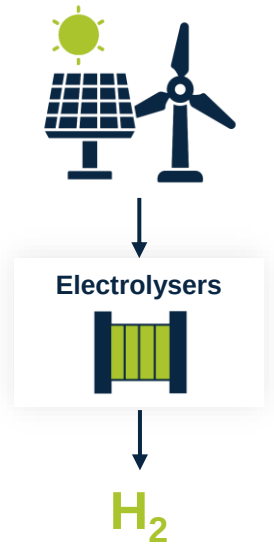
Hysata's CFE cell enables a winning value proposition.

Lowest LCOH	• Highest system efficiency: 95% (41.5 kWh/kg) vs 70-75% (53-56 kWh/kg) for incumbents • Low capex: low stack cost & simple, low-cost balance of plant
Scalability	• Designed from the ground up for mass-manufacturability • Earth abundant materials – no PGMs needed (unlike PEM)
Easy integration	• Fast dynamic performance allows low-cost renewable electricity • Small footprint, low mass and low KOH volume • BOP designed in-house for close integration with stack
Reliability	• Alkaline electrolyte enables robust, low-cost materials with high recyclability • No bubbles – less mechanical stress on electrodes • Simplified BOP – low parts count

Efficiency wins: worth billions of dollars.

Example: Renewable energy systems capex savings for the production of 1Mt H_2 p.a., USD



	Incumbent electrolyser	Hysata
	75% efficiency[1] 52.5 kWh/kg	95% efficiency[1] 41.5 kWh/kg
	14 GW	11 GW
	7.6 GW	6.0 GW
	1 Mtpa	1 Mtpa

Reduction	x	Capital cost	=	Saving	
3 GW		$1B/GW[2]		**$3B**	21%

Hysata technology is a **gamechanger**

1. System efficiency (stack plus balance of plant), based on HHV
2. Based on forecast 2030 costs (2020-21 dollars) taken from CSIRO Gencost 2020-21, High VRE scenario, with 56:44 wind to solar PV ratio

Questions.

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