



Solid Oxide Technology

The bridge between hydrogen, heat and power

Jon Harman – June 2022

CLEAN ENERGY STARTS WITH CERES



Leading solid oxide **technology for power and green hydrogen** matured and refined for over 20 years

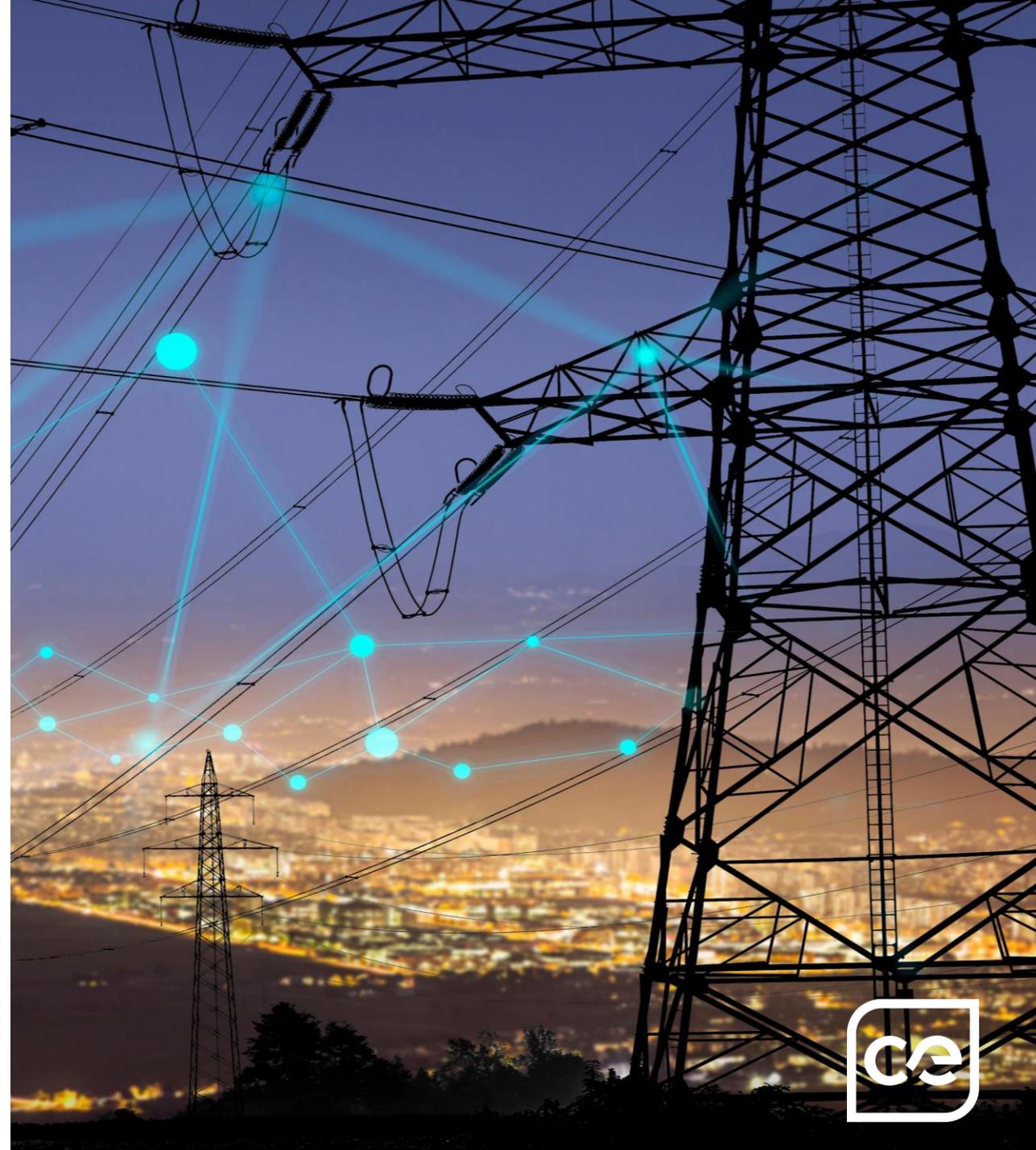
Spun out of **Imperial College London** in **2001** we now have over 600 employees

Unique IP ~100 patent families

Licensing business model

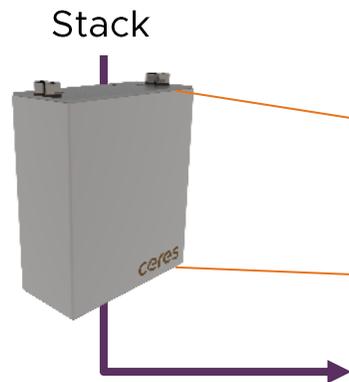
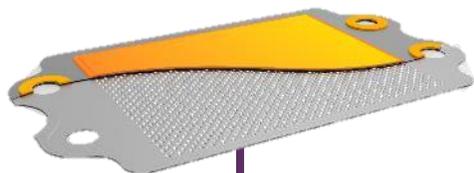
We **collaborate with world-leading companies** to deliver clean energy technology...

...at scale and pace



Single product to multiple applications and customers

Ceres technology enables high efficiency energy conversion at low cost



ceres
POWER



MIURA



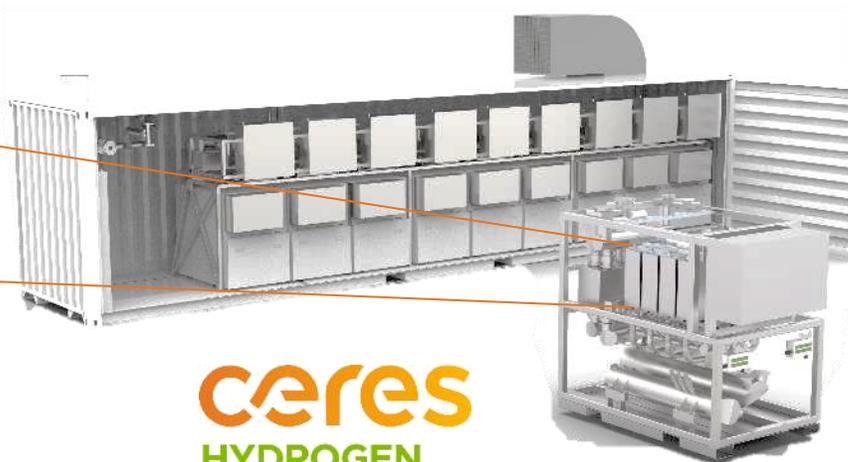
BOSCH



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ceres
HYDROGEN

Engaging with global majors in Oil & Gas, Industrial Gas and Clean Energy

Electrolysis enables growth by building on mature fuel cell capability and technology

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POWER

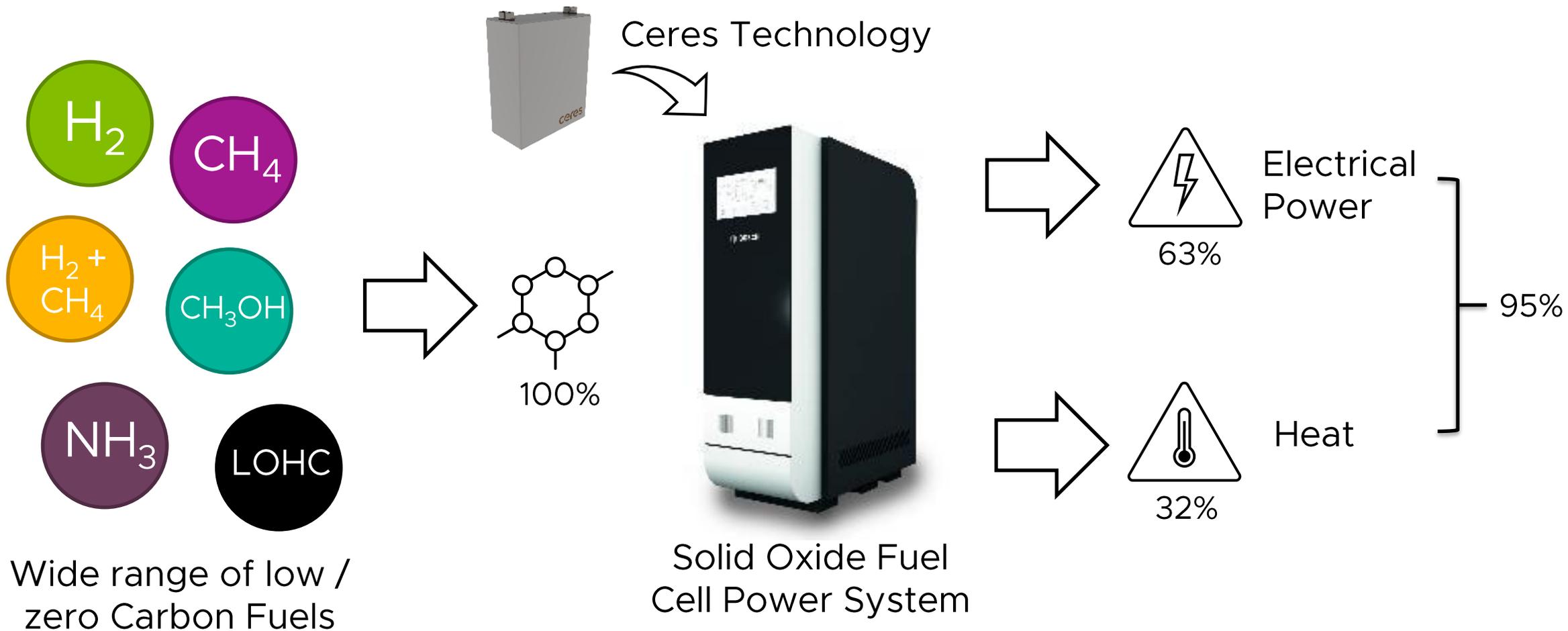
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HYDROGEN

Same core cell and stack technology platform
Same IP portfolio covering SOEC and SOFC
Same manufacturing process and supply chain
Same partnering model providing scale

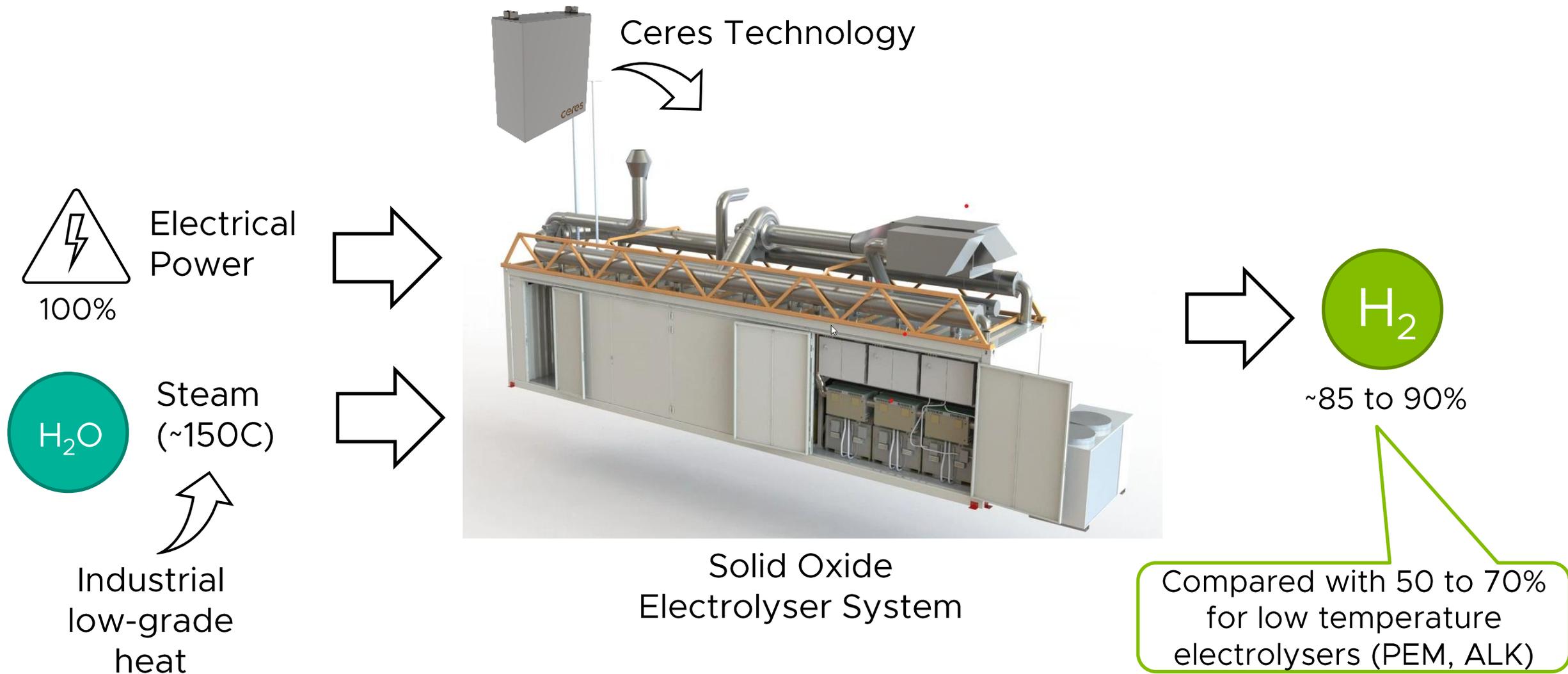
**COMMERCIALISATION
PHASE**

**DEVELOPMENT
PHASE**

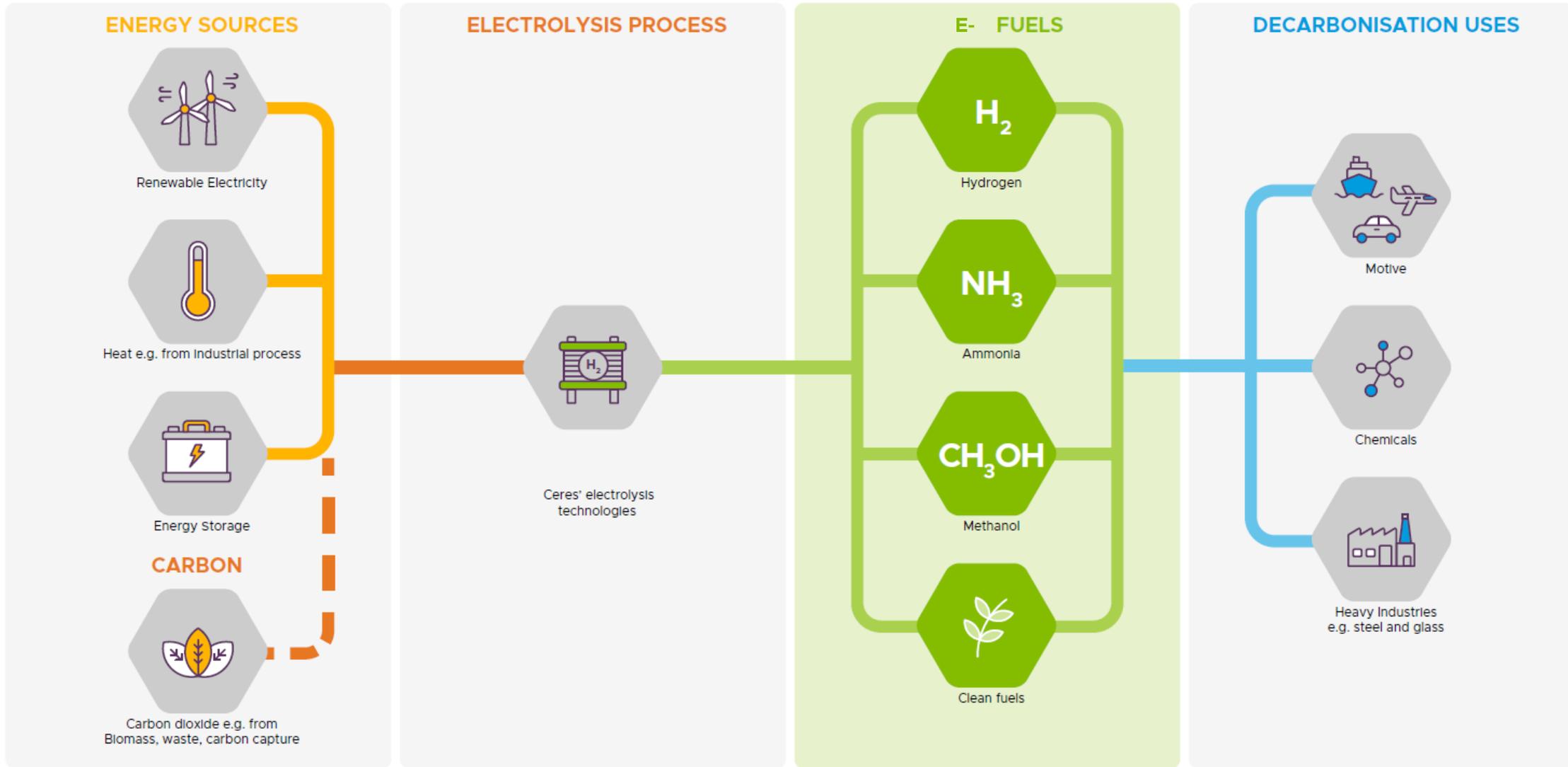
Solid Oxide Fuel Cell Power System (SOFC)



Solid Oxide Electrolyser System (SOEC)



Ceres electrolysis enables clean fuels and de-carbonisation of industry



1MW First of a kind SOEC demonstrator due on test in early 2023



Specification	Target Value
Electrical Power Input (AC)	~1MW
Hydrogen Production	~600kg / day
System Efficiency	>80%, LHV, AC
Electrolyser Operating Temperature	540 to 610C

SOEC Stack / Module / System Demonstrator Roadmap



Q4 2020

SOEC technology proven



Q1 2023

First 1MW-class prototype System on test



2026

SOEC stack (740-E) product release

From 2030
Commercial plants operational

Today

Q3 2022

Electrolysis Module on test at Ceres

2024

Pre-commercial system development projects initiated

2027

First commercial projects commence (10MW+)



Minimum viable product demonstration

OEM commercialisation





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THANK YOU

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