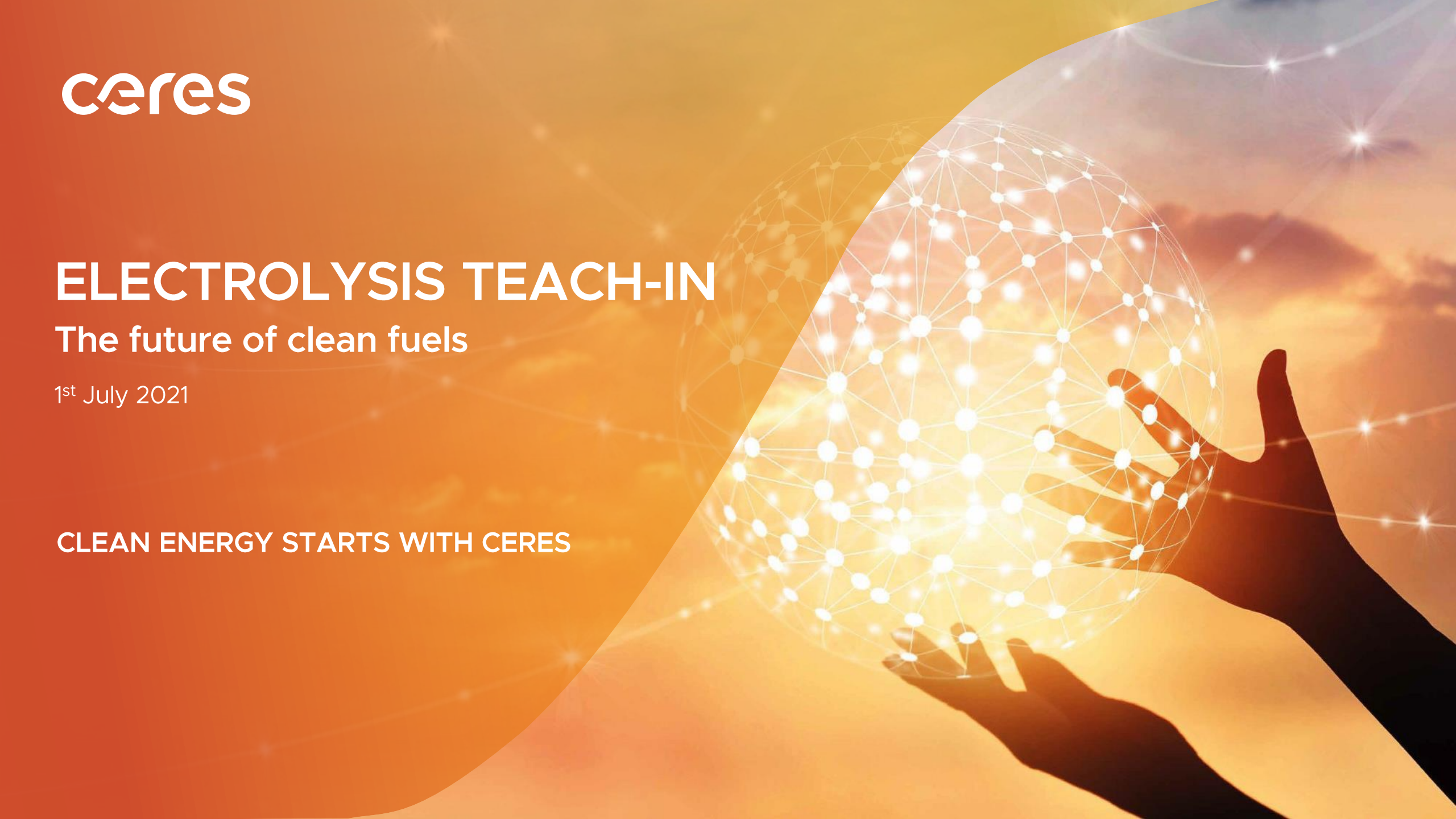
ELECTROLYSIS TEACH-IN

The future of clean fuels

1st July 2021

CLEAN ENERGY STARTS WITH CERES



Today's agenda

Solid oxide electrolysis (SOEC) Teach-in

Introduction – Phil Caldwell, Chief Executive Officer

Technology overview – Mark Selby, Chief Technology Officer

Ceres' technology – Jon Harman, Director of E-fuels Programme

Commercial strategy – Dipak Mistry, Director of Commercial Partnerships

Intellectual property – Clarissa de Jager, General Counsel and Director IP

Business model – Tony Cochrane, Chief Commercial Officer

Q&A – Richard Preston, Chief Financial Officer

The Ceres team

Phil Caldwell
Chief Executive Officer

Mark Selby
Chief Technology Officer

Jon Harman
Director of E-fuels Programmes

Clarissa de Jager
General Counsel and Director of IP

Dipak Mistry
Director of Commercial Partnerships

Tony Cochrane
Chief Commercial Officer

Richard Preston
Chief Financial Officer

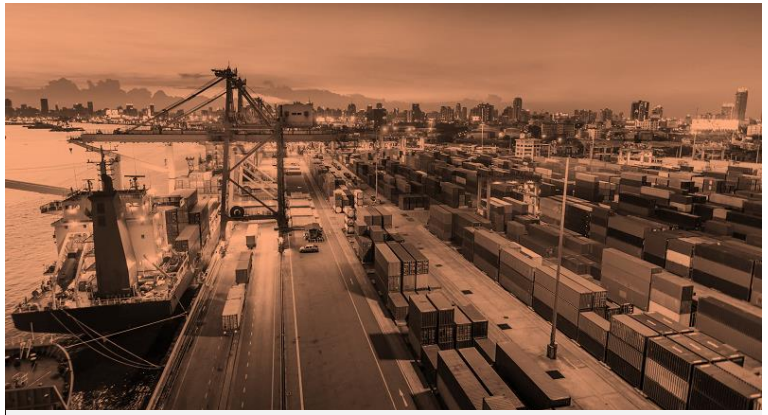
INTRODUCTION

Phil Caldwell
Chief Executive Officer

The time is right for growth to tackle climate change

Policy

- More than 20 countries have now published dedicated hydrogen strategies
- Ceres already has strong partnerships in some of the most progressive countries; Japan, Germany, South Korea and China



Industry

- Climate action remains the single biggest challenge
- Major corporations across the globe, including BP, Microsoft and Bosch have made net-zero pledges

Green investment

- Shareholder resolutions increasingly calling for better disclosures of climate change risks and emissions
- Transitioning to net zero represents a significant challenge but also a huge investment opportunity

Clean energy technology to address climate change

Ceres POWER

Stationary SOFC

Ceres core IP, 1kW to 20kW. Potential for 150-500kW utility scale

HIGHER POWER

Ceres POWER

Transport SOFC

Ceres 30kW today. Potential for 150kW+ for trucks and shipping

NEW APPLICATIONS

Ceres HYDROGEN

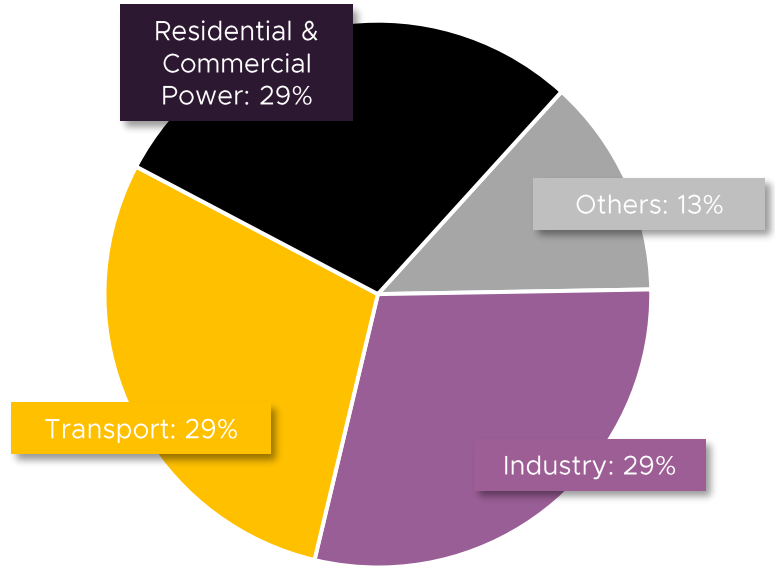
SOEC

SOEC for H_2 demand in industrial uses e.g. green steel, ammonia, e-fuels

H_2 & E-FUELS

Global demand for energy

By sector



Source: IEA World Energy Balances, 2020

£181m raise of 10% of share capital to more than double addressable market for Ceres

SOFC: 25% of funds

- Growth opportunities
- New markets
- Industry standard in SOFC

SOEC: 55% of funds

- Opportunity for differentiated SOEC technology
- Access significant green hydrogen market for industrial applications

Core investment across SOEC and SOFC: 20% of funds

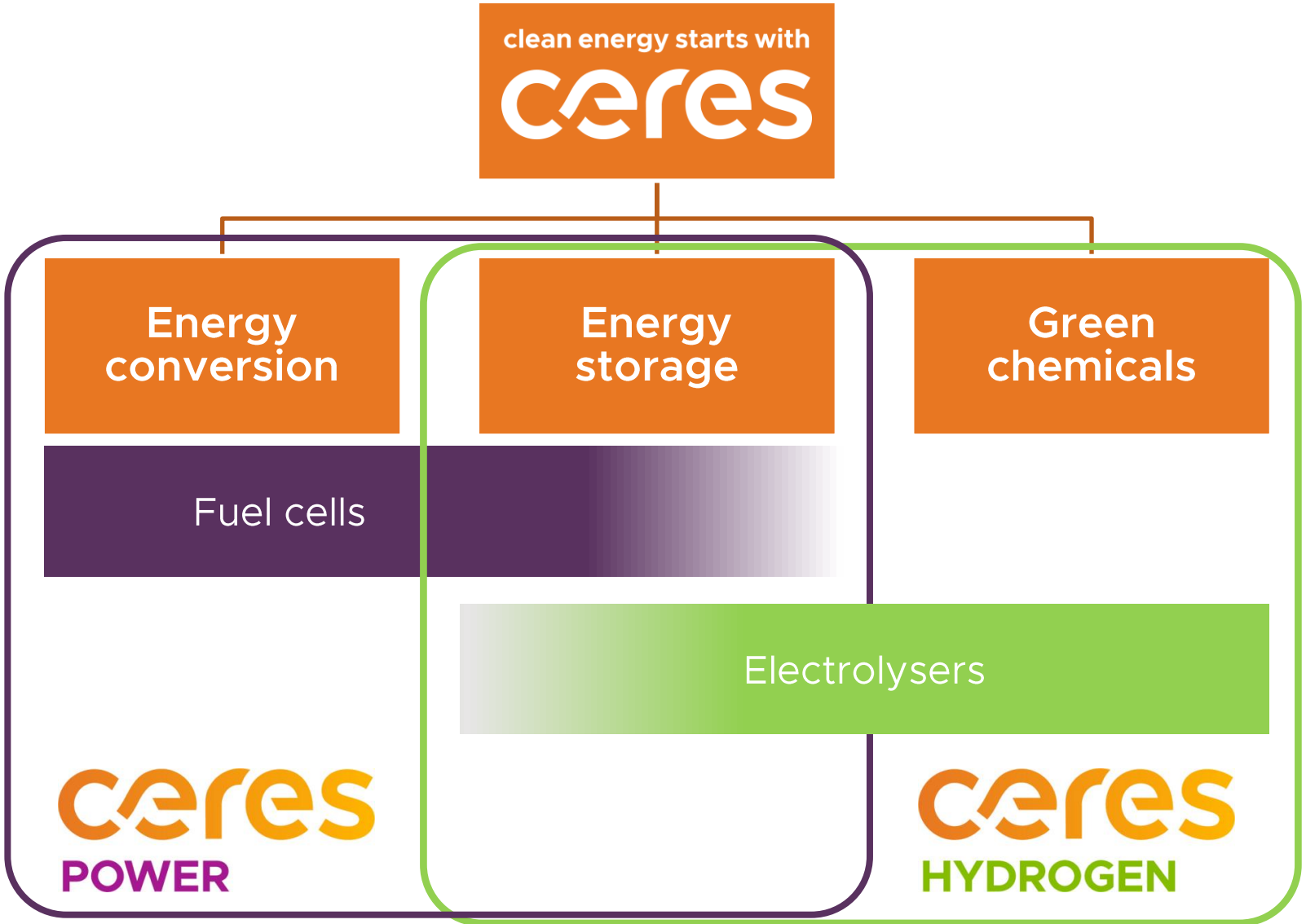
- Investment in core business
- Accelerate innovation and development
- Maintain technology leadership
- General working capital

- Weichai Power (20%) and Bosch (18%) supportive of fundraising and strategy, full participation
- Strong investor backing

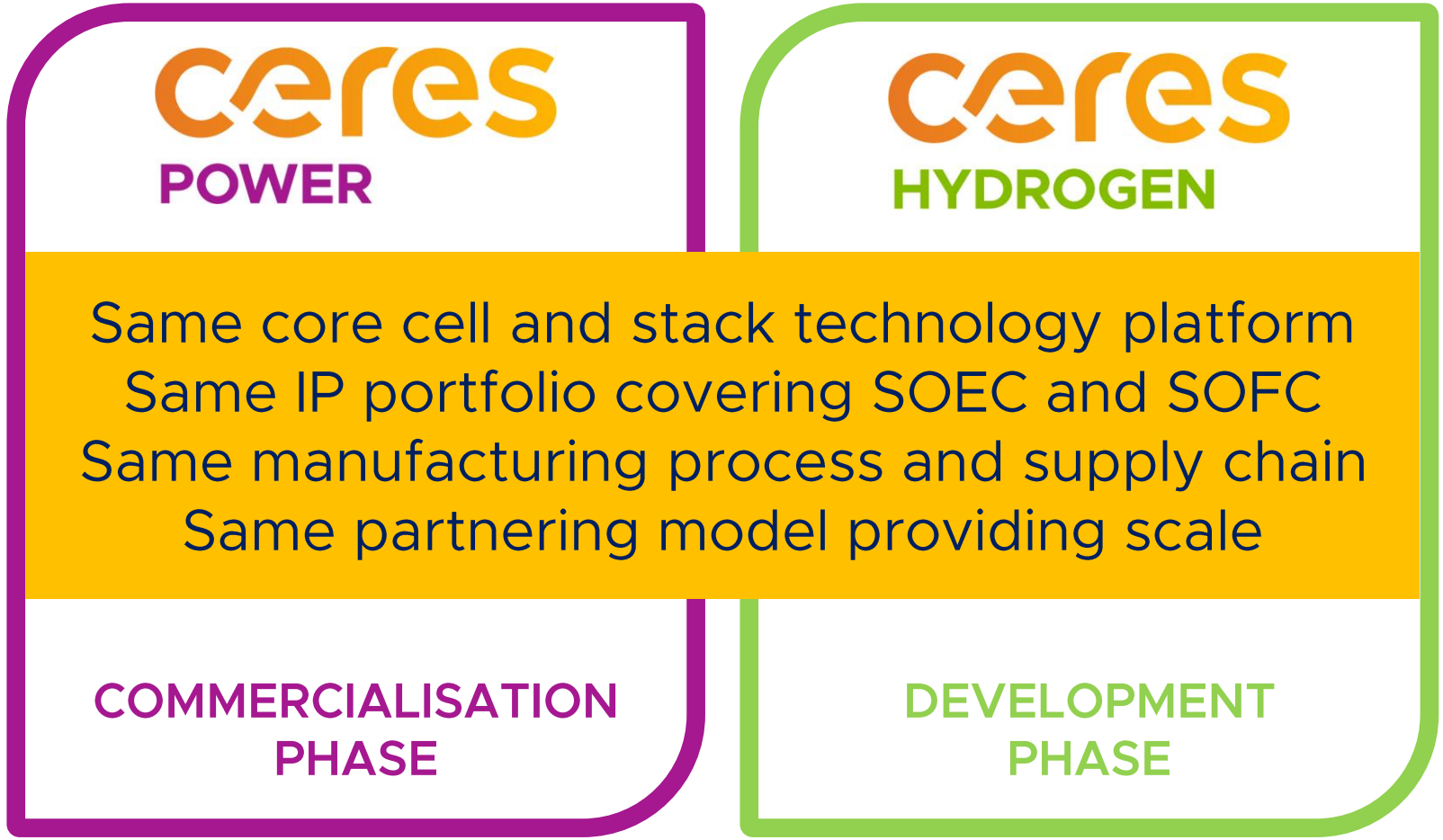
TECHNOLOGY OVERVIEW

Mark Selby
Chief Technology Officer

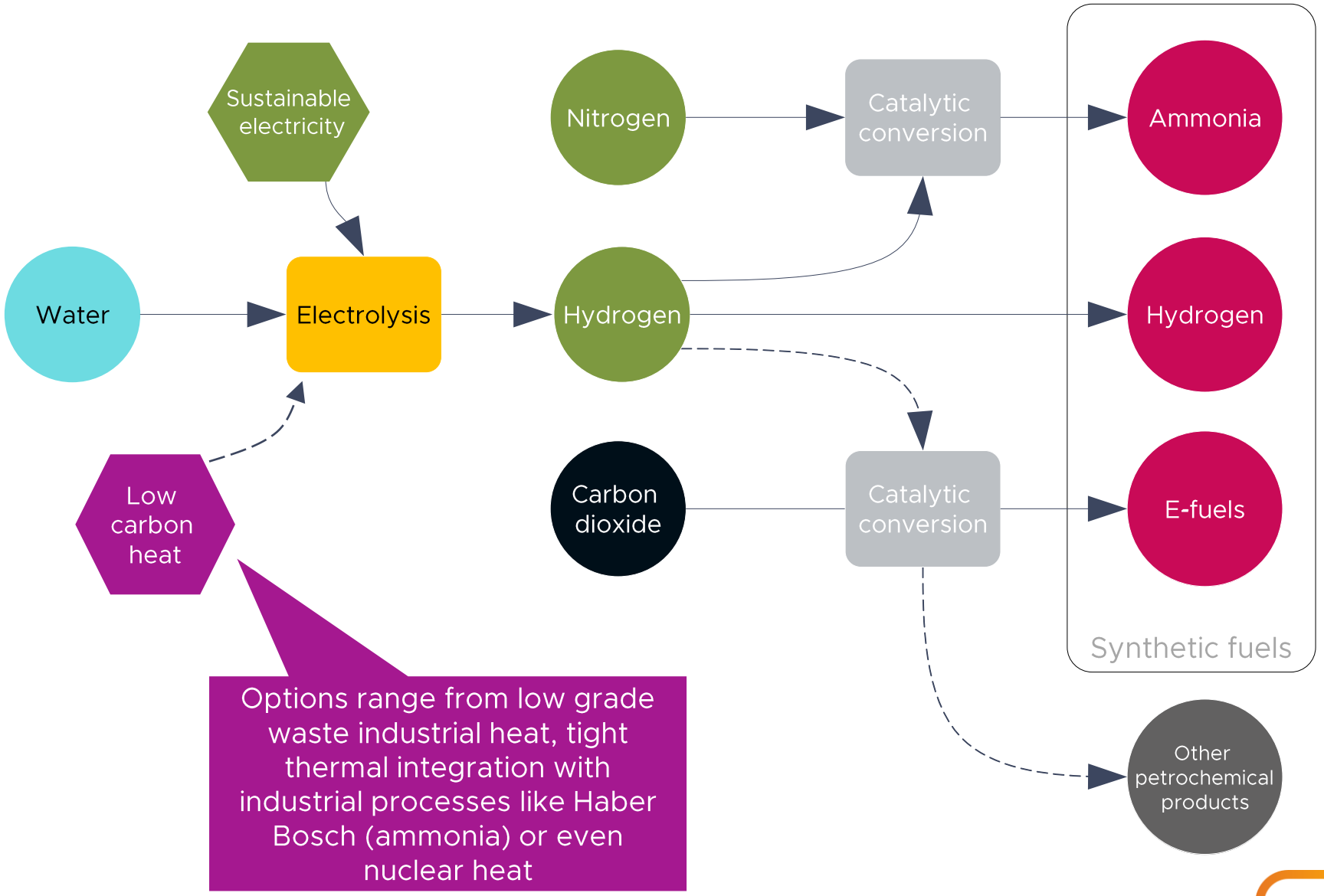
Ceres technology and competences span applications for the energy transition



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



Electrolysis is a cornerstone technology for decarbonising the hard-to-abate sectors



Adapted from : "Ammonia: zero-carbon fertiliser, fuel and energy store" ©The Royal Society. Under Creative Commons Attribution License

Solid oxide electrolysis is highly differentiated

SOEC	**Industrial uses, steel and e-fuels**	**74% to 95% efficiency**

Potential: highest efficiency

PEM	**Grid balancing Refuelling stations**	**Up to 68% Efficiency**

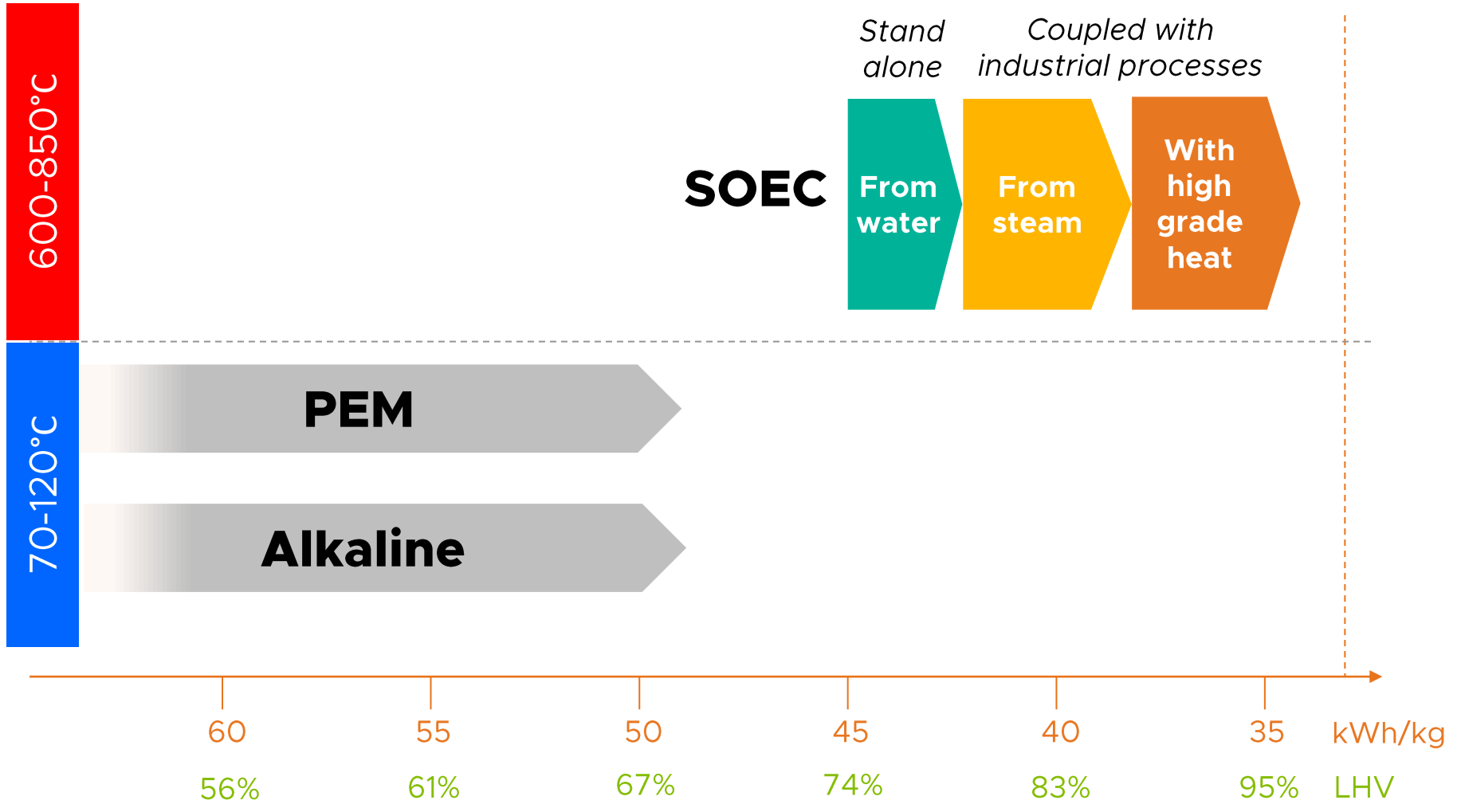
Challenger: dynamic response

Alkaline	**Industrial/bulk production**	**Up to 68% efficiency**

Most mature: largest scale, lowest cost today

Source: *Green Hydrogen Cost Reduction –Scaling up Electrolysers to Meet the 1.5°C Climate Goal* International Renewable Energy Agency, 2020, Abu Dhabi
All values quoted as lower heating value, from water at 25°C

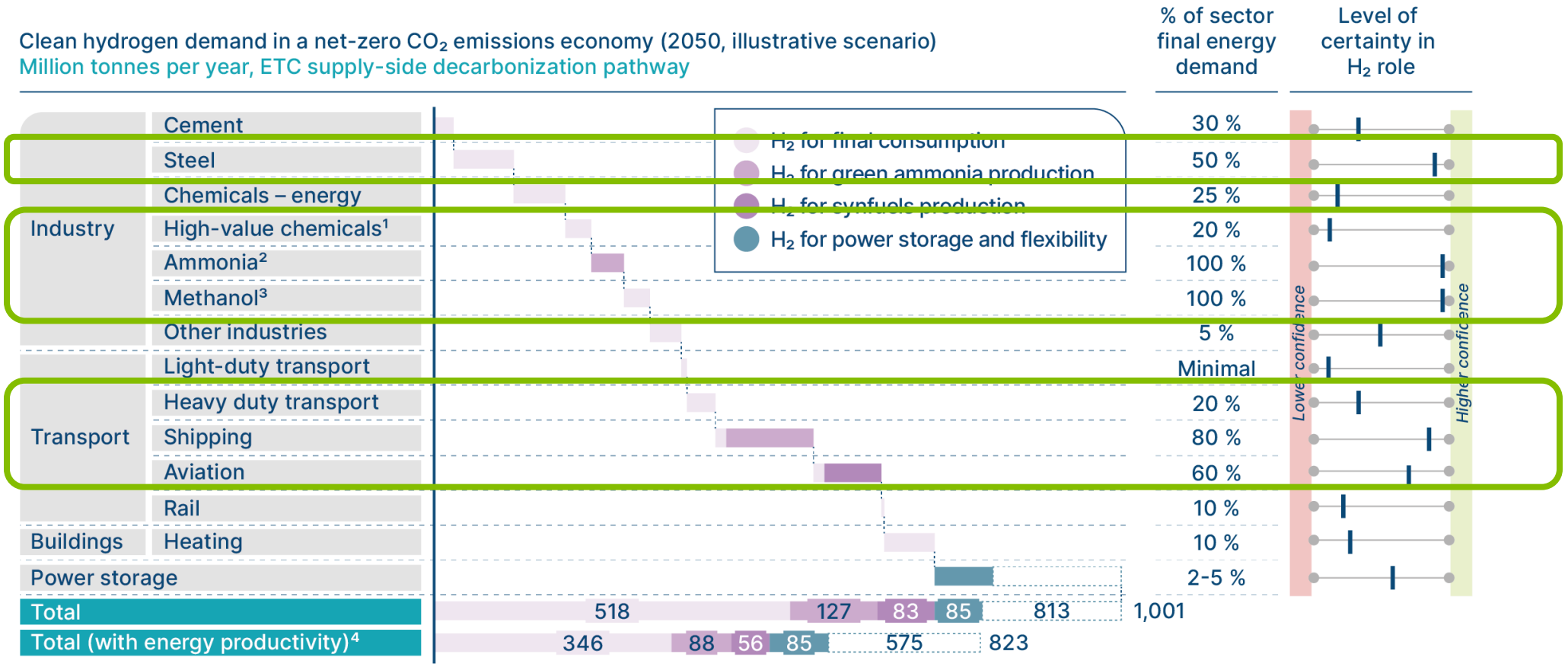
SOEC intrinsic thermodynamic advantage over low temperature electrolysis



Green Hydrogen Cost Reduction –Scaling up Electrolysers to Meet the 1.5°C Climate Goal

International Renewable Energy Agency, 2020, Abu Dhabi

Clean hydrogen will play a growing role across the economy as the world transitions towards net-zero

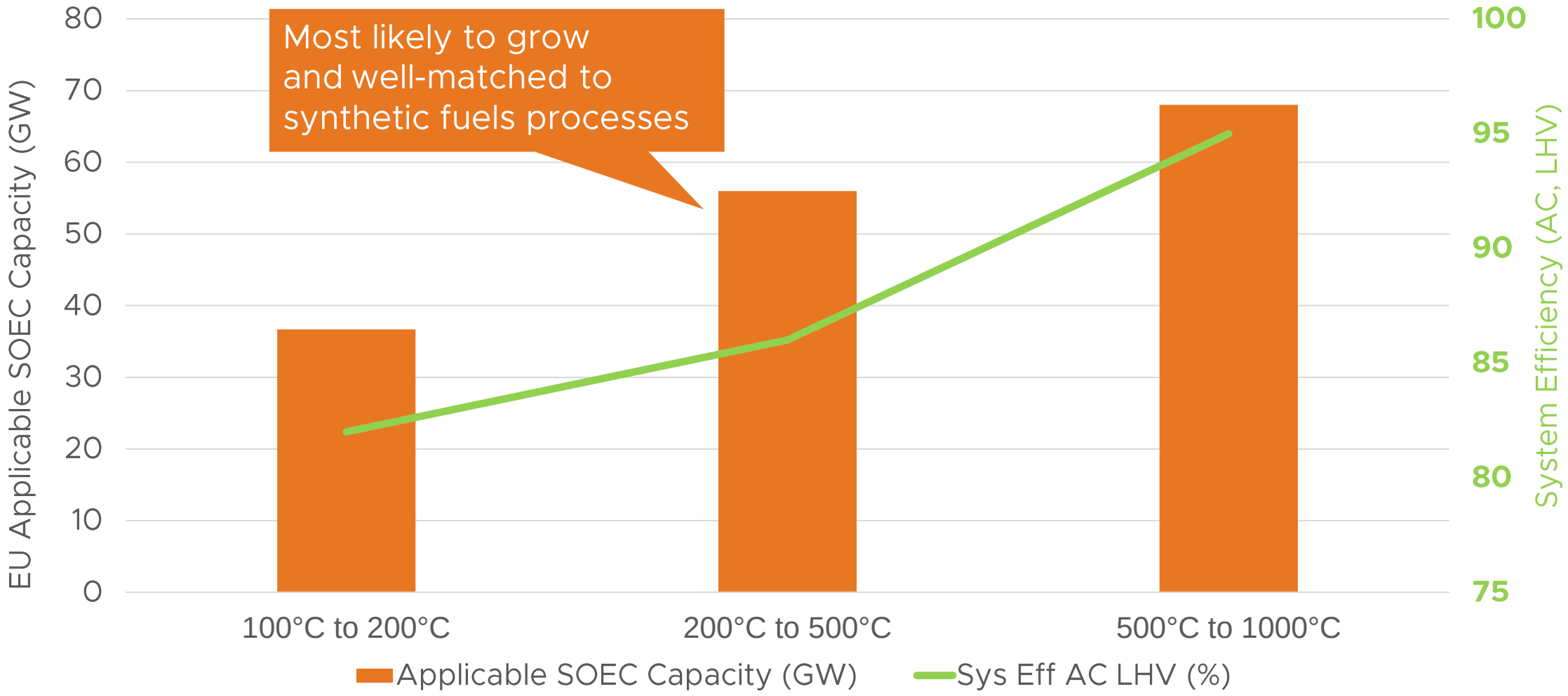


Hard to Abate Sectors account for >400MT of green hydrogen demand by 2050

NOTES: [1] High value chemicals predominantly used to produce plastics, which could potentially be produced via Hydrogen and CO_2 in the future (via methanol and MTO process); [2] Around 80% of ammonia (excl. shipping) is used to produce fertilisers; [3] Methanol is used as intermediate in numerous chemical processes, including plastics production. [4] ETC scenario including maximum energy productivity improvements.

SOURCE: SYSTEMIQ analysis for the Energy Transitions Commission (2021)

Waste heat represents a significant opportunity for green hydrogen

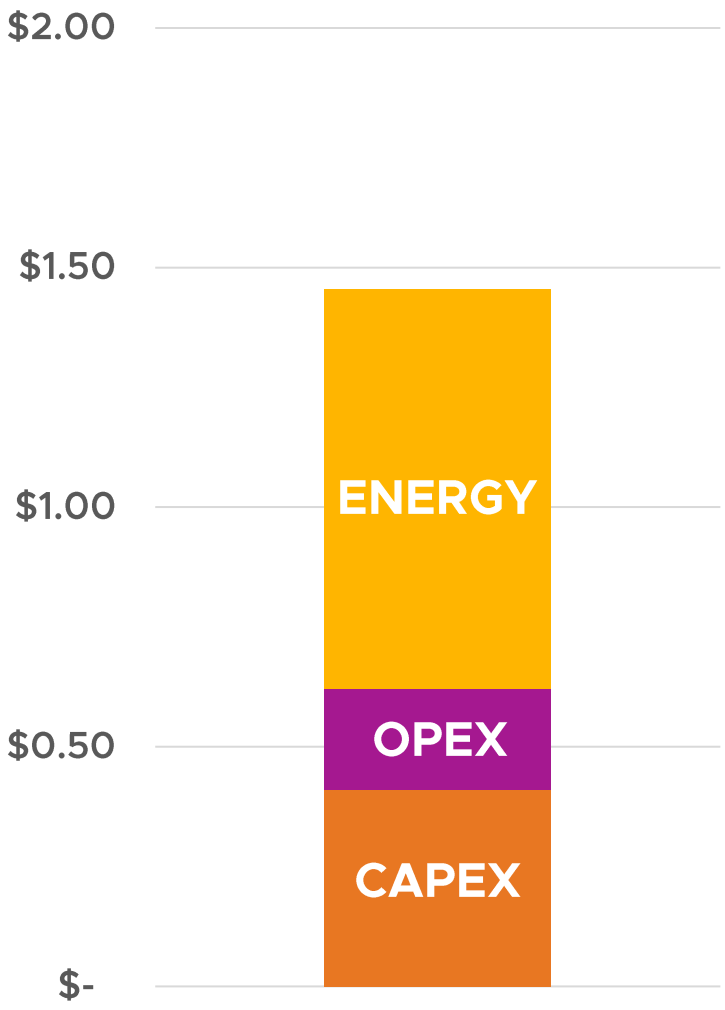


M. Papapetrou, G. Kosmadakis, A. Cipollina, U. La Commare, G. Micale, *Industrial waste heat: Estimation of the technically available resource in the EU per industrial sector, temperature level and country*, Applied Thermal Engineering 138(2018) 207-216

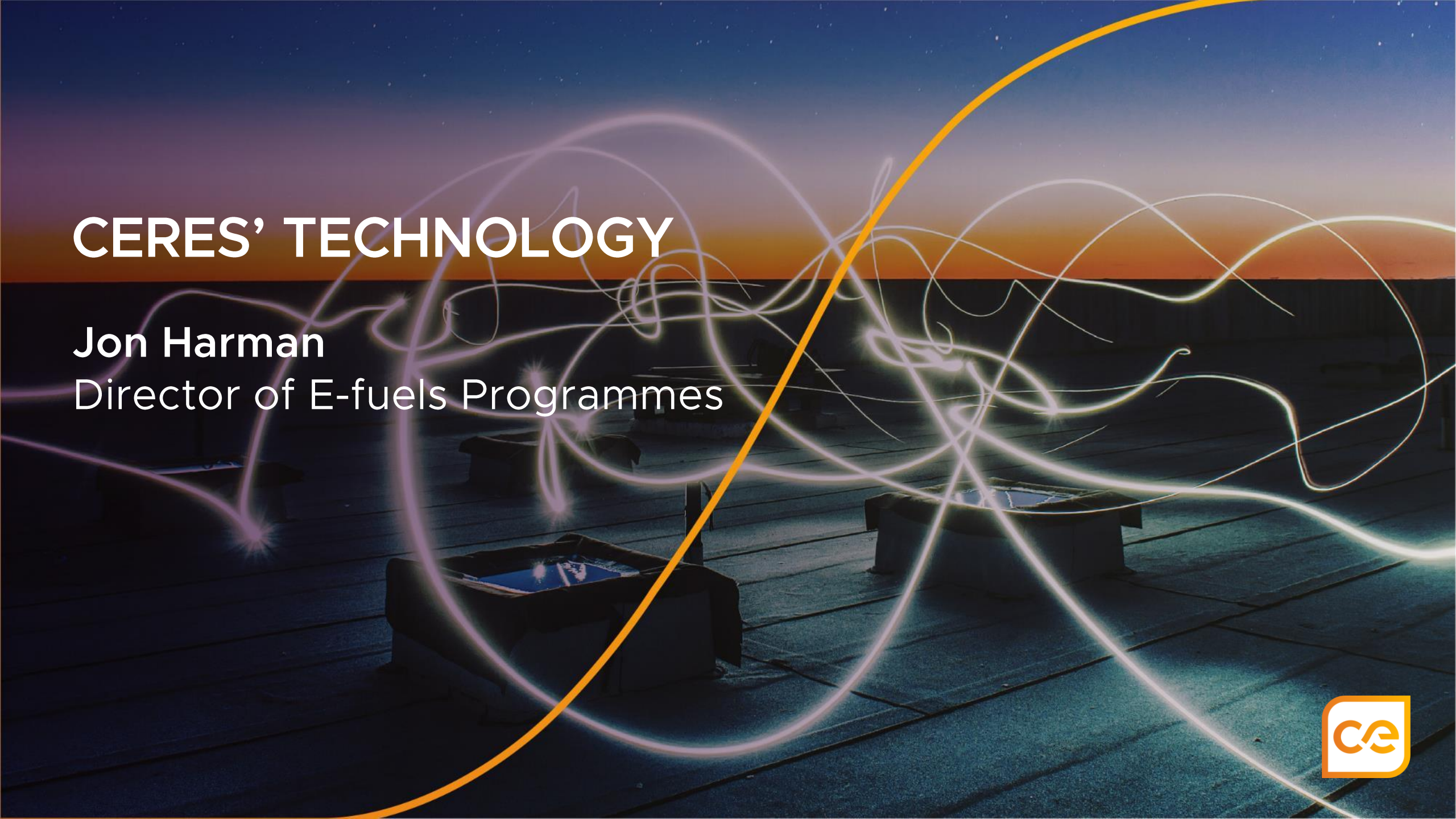
SOEC is a cornerstone of the energy transition that expands markets for our partners

System capex: $1000/kWe
System efficiency:80%/42kWh/kg
Cost of electricity: $20/MWh
Capacity factor: 90%

Levelised cost of hydrogen (USD/kg)



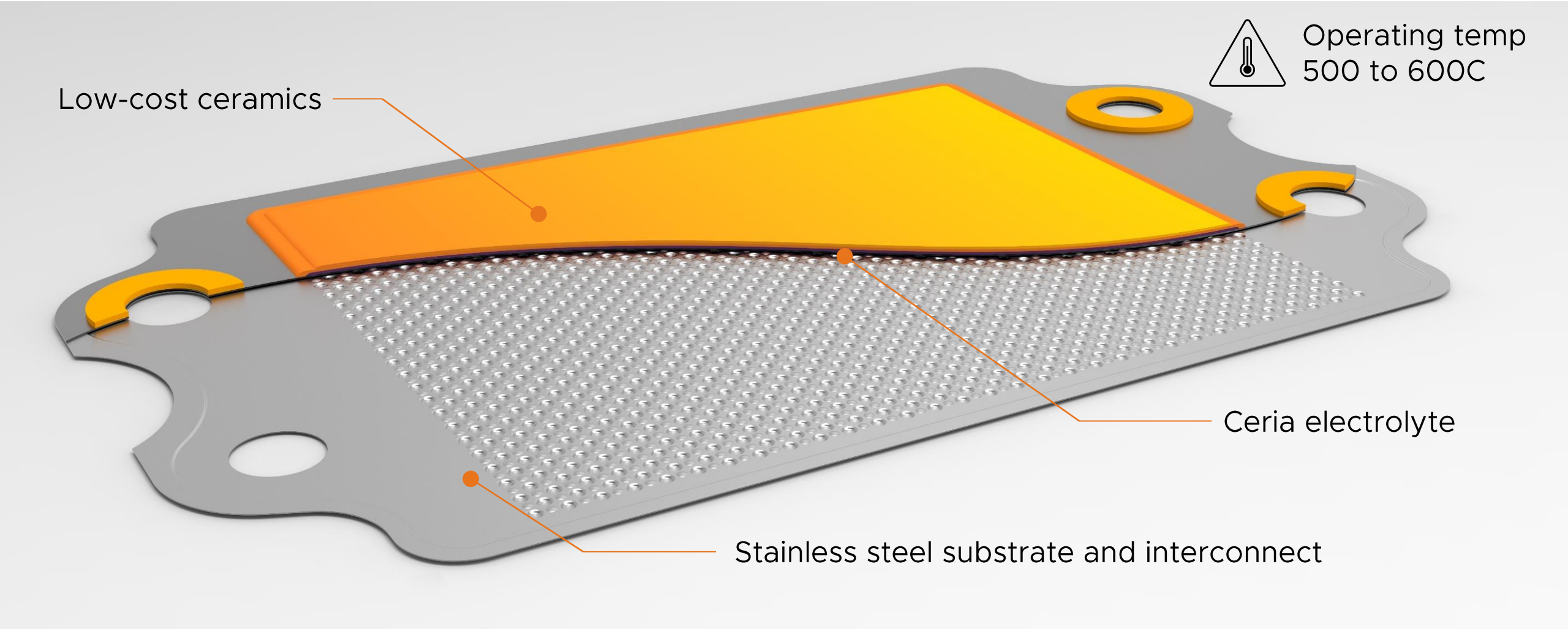
- Deployable in partnership and enabled by existing licensees
- Key technology for hard-to-abate sectors
- Future e-fuels enabler



CERES' TECHNOLOGY

Jon Harman
Director of E-fuels Programmes

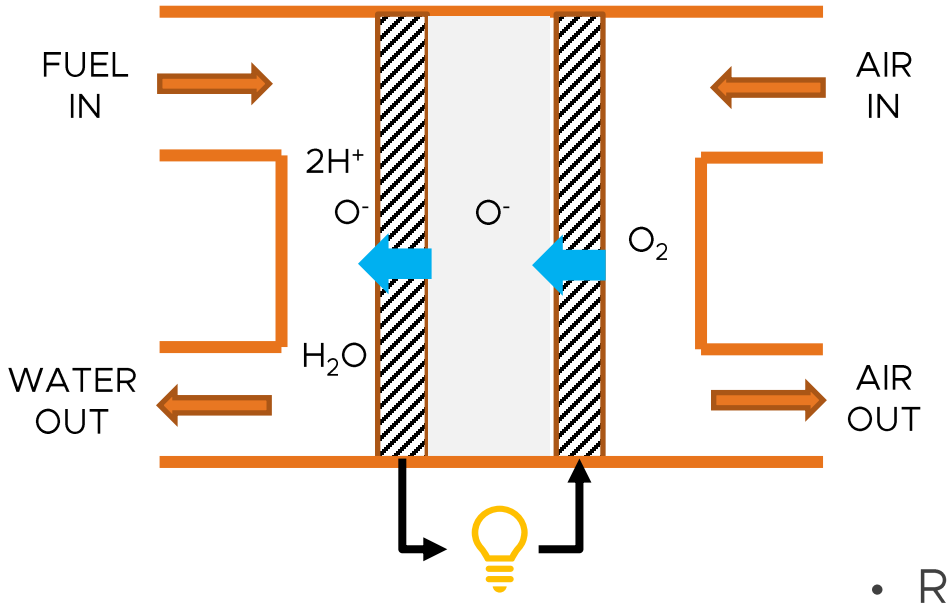
SteelCell® technology enables high efficiency energy conversion at low cost



SteelCell® technology is able to operate in either fuel cell or electrolysis mode

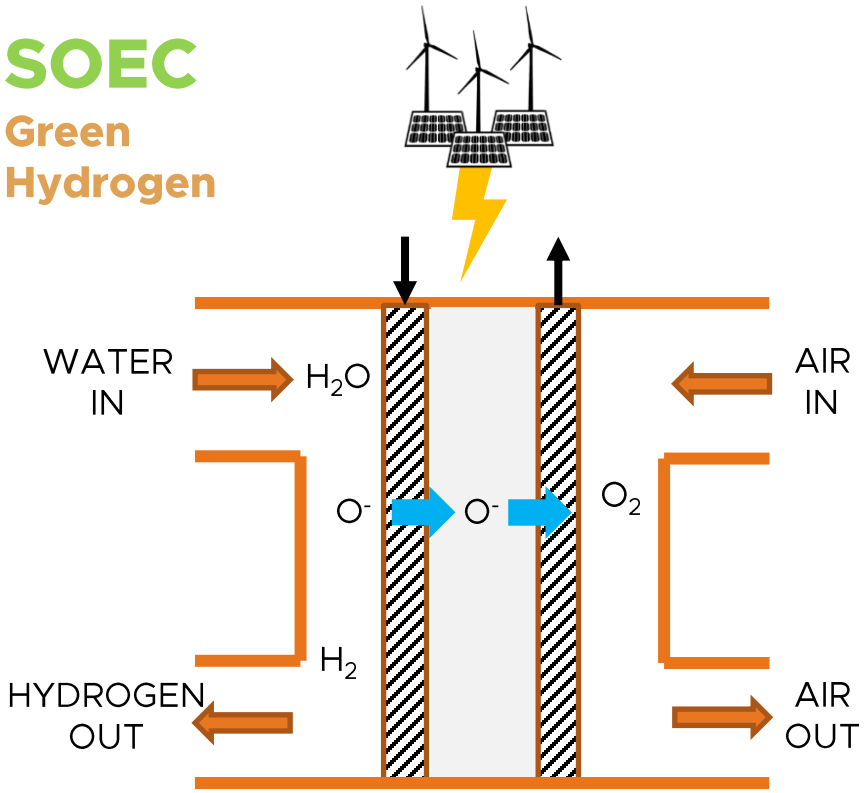
SOFC

Hydrogen or Natural Gas



SOEC

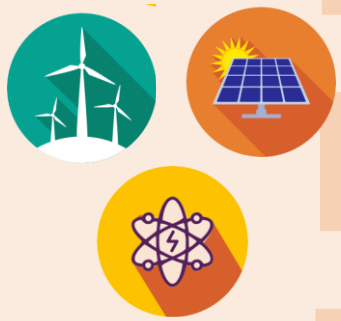
Green Hydrogen



- Rich area for innovation
- No technology breakthroughs needed to exploit commercially
- Focus is on technology maturation

Low temperature SOEC unlocks process integration opportunities

Primary clean energy sources

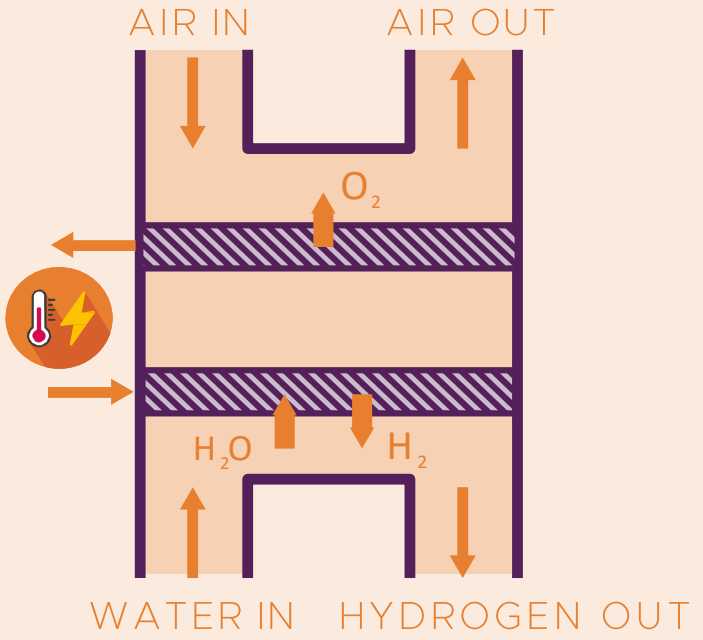


Carbon-free electricity

Water

Process Heat

Low temperature solid-oxide electrolysis technology



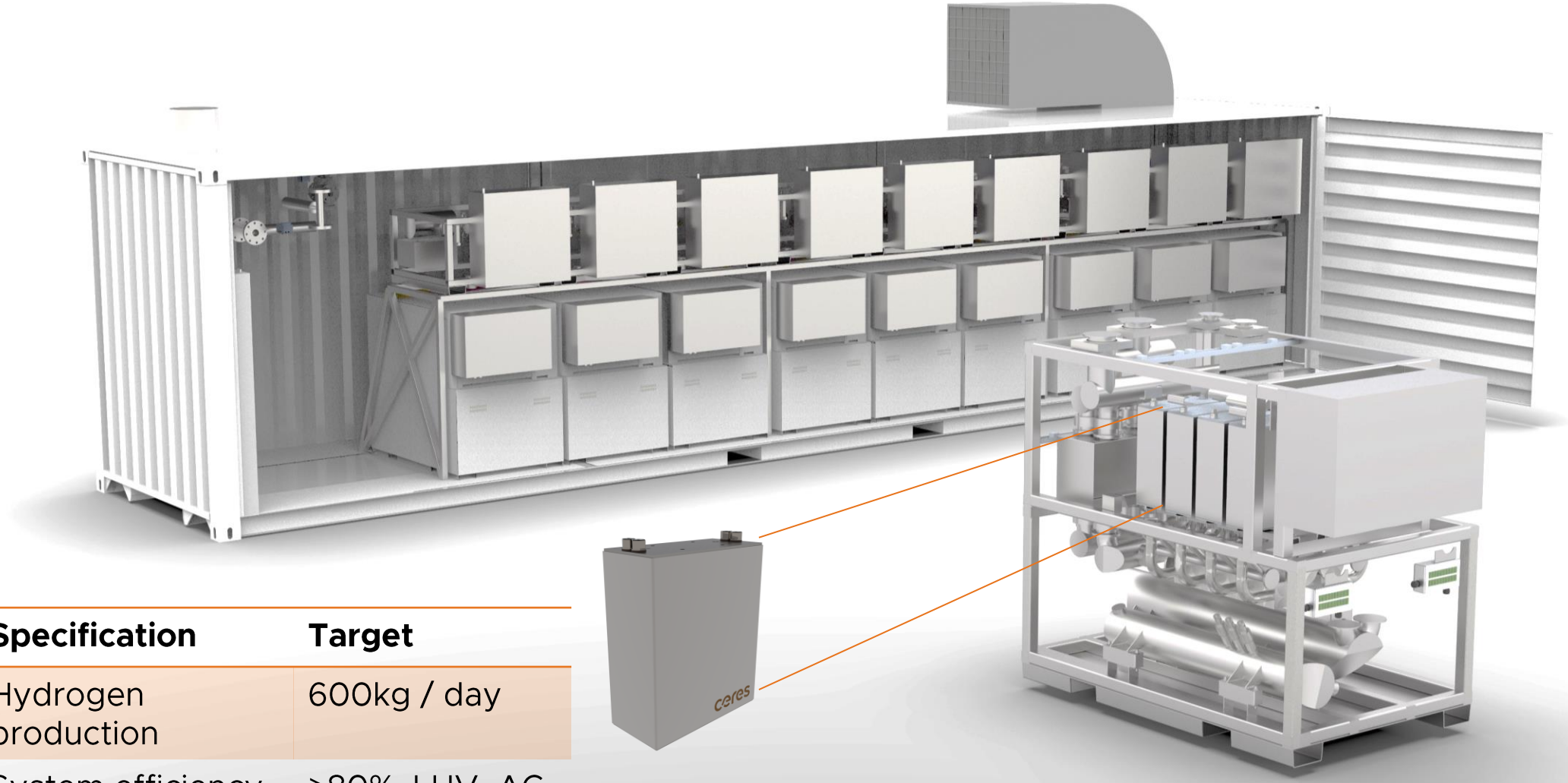
Green hydrogen

Existing operational technology

High efficiency Scalable supply chain

Cost-competitive zero carbon hydrogen

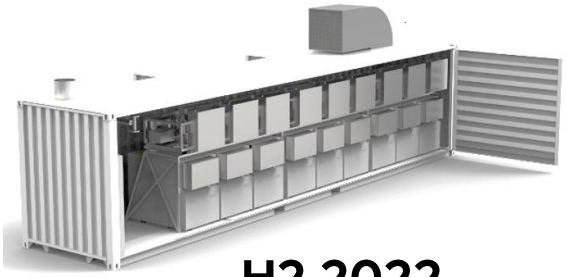
First 1MW-class SOEC system demonstrator due to be operational in 2022



Specification	Target
Hydrogen production	600kg / day
System efficiency	>80%, LHV, AC

Deployment of first commercial SOEC plants expected from 2025

Q4 2020
SOEC technology proven



H2 2022
Prototype system operational

2024
SOEC stack product release

Q4 2021
ECM subsystem operational

2023
Pre-commercial system development

2025
First commercial systems

Target hydrogen production at <$1.50/kg[1]

Minimum viable product demonstration | OEM commercialisation

1: Energy cost: US$20/MWh and >80% efficiency at volume

Timeline estimated by Directors based on projected timescales

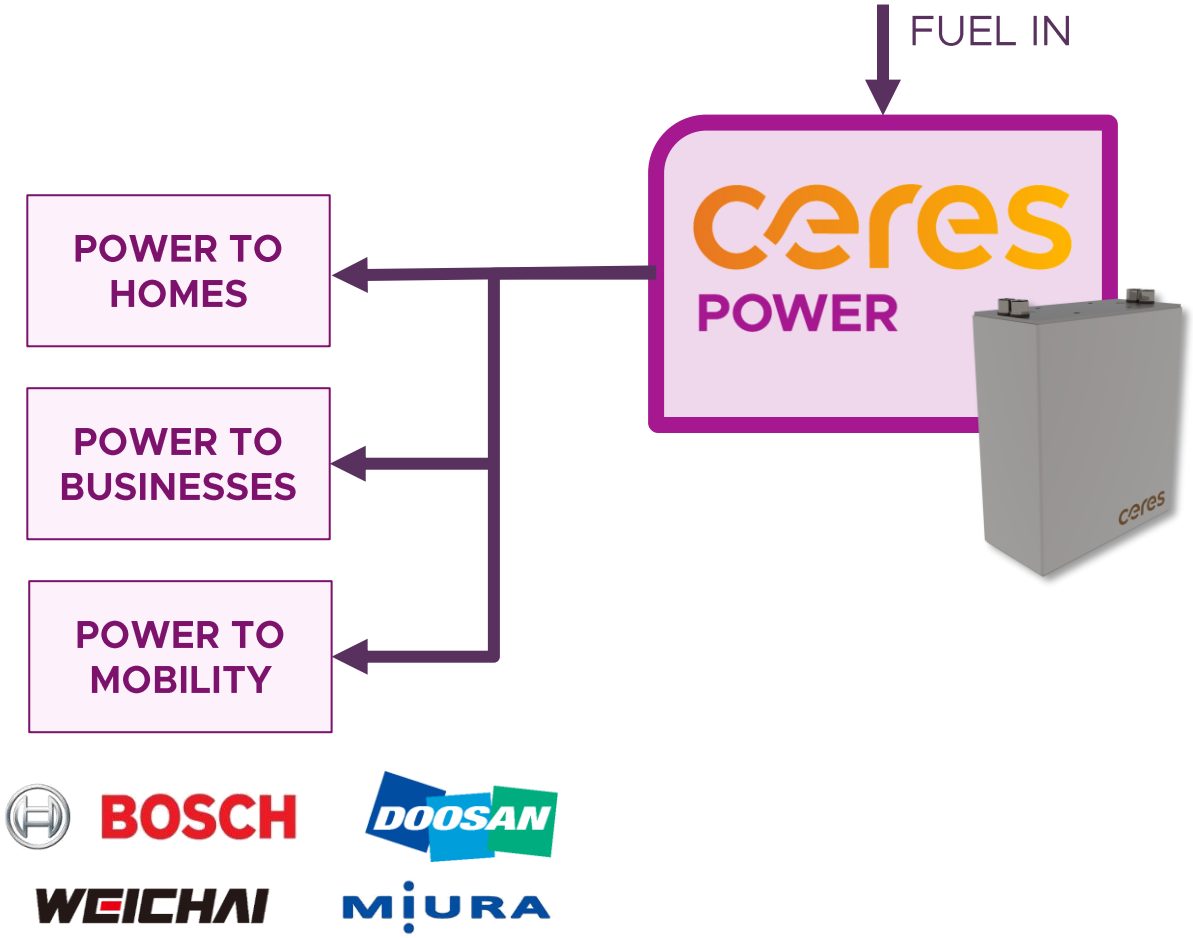
MW-scale SOEC demonstration in 2022 sets path to commercialise technology

- Applying well-established and mature technology to electrolysis
- Unlocking green hydrogen opportunities for close integration with industrial and energy generation processes

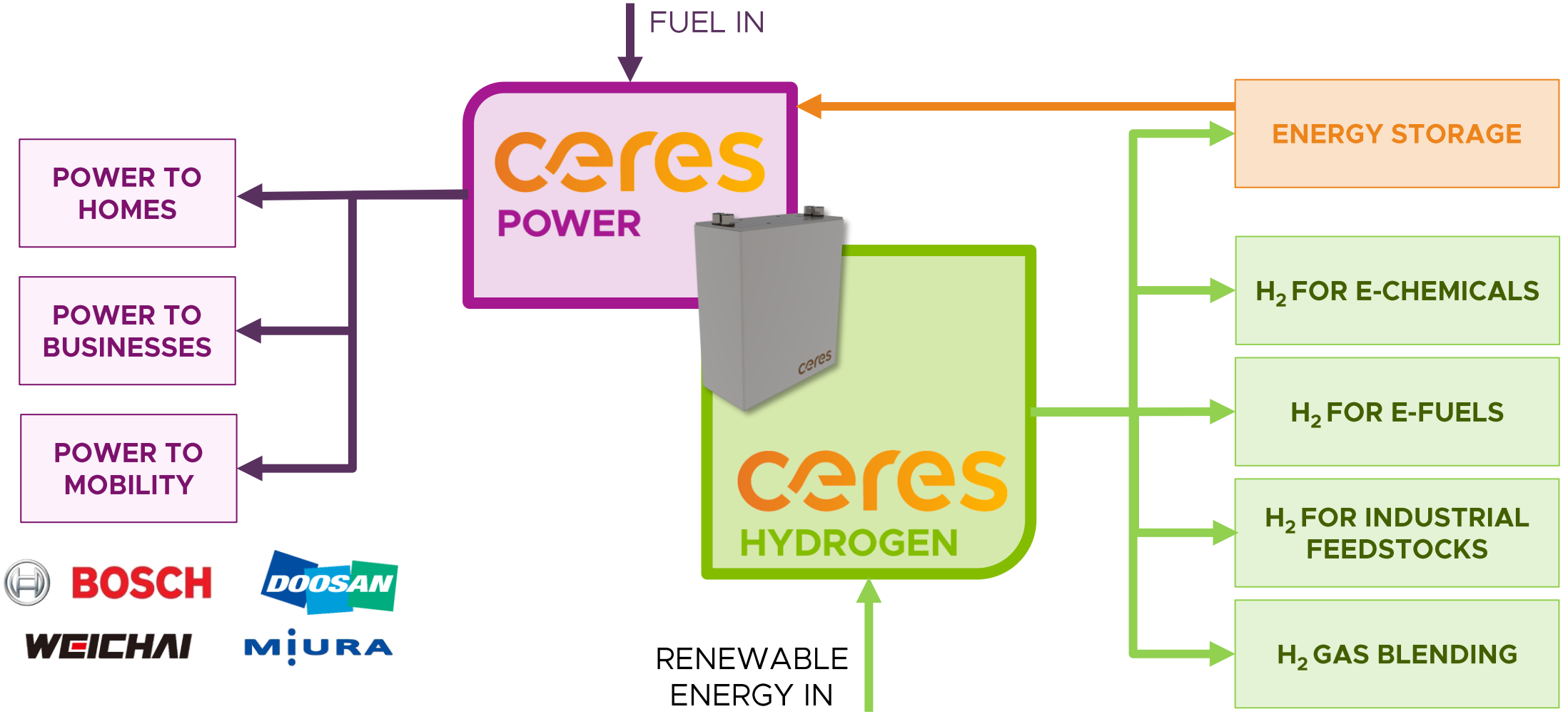
COMMERCIAL STRATEGY

Dipak Mistry
Director of Commercial Partnerships

Established and growing business in SOFC



Now addressing potentially even greater market for SOEC

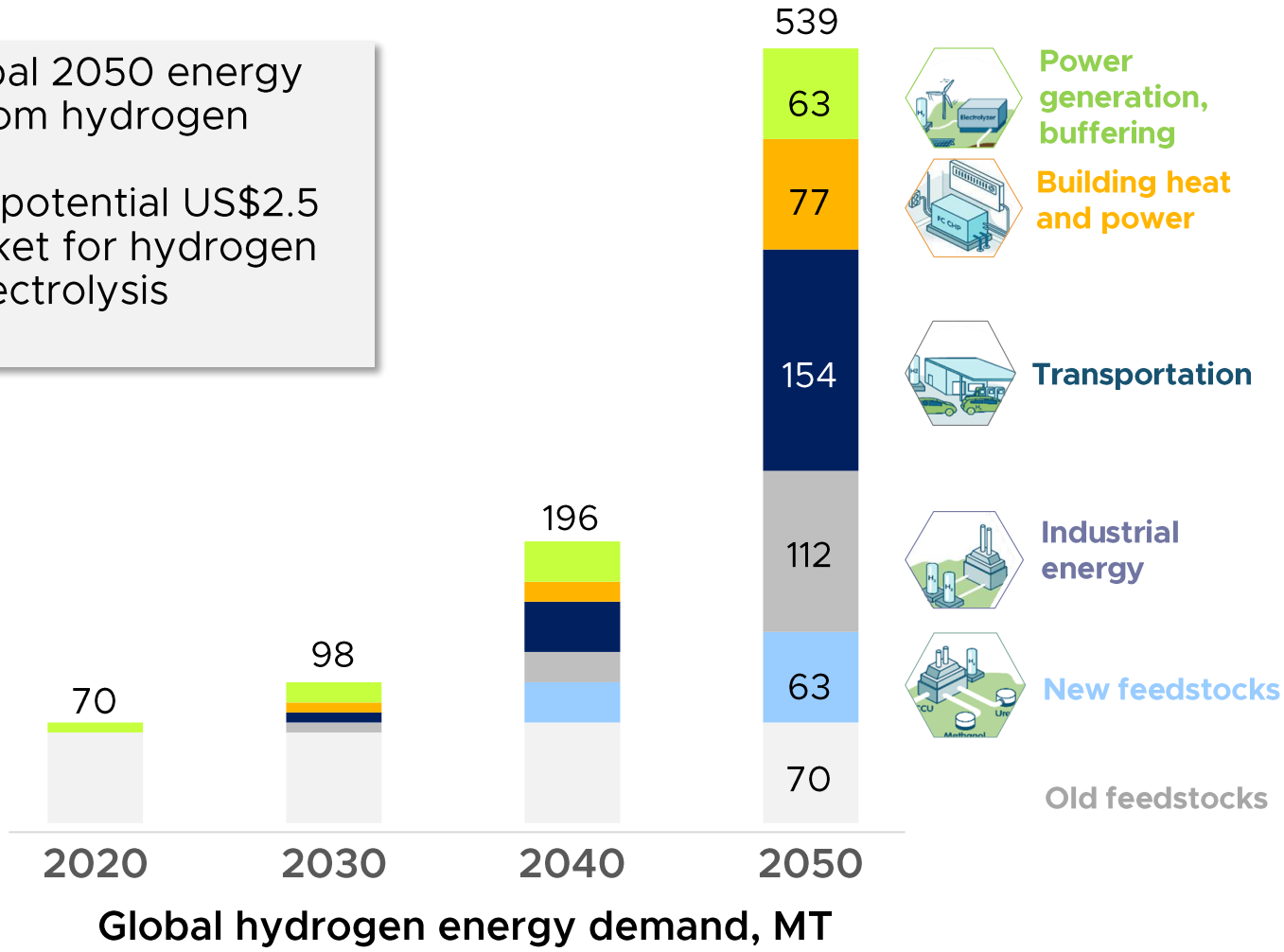


Green graphics and text indicate potential new markets

Rapidly growing market for electrolysis to meet 2050 targets

18% of global 2050 energy demand from hydrogen

By 2050 a potential US$2.5 trillion market for hydrogen gas and electrolysis equipment



Source: McKinsey and Hydrogen Council

Targeting future suppliers of green hydrogen

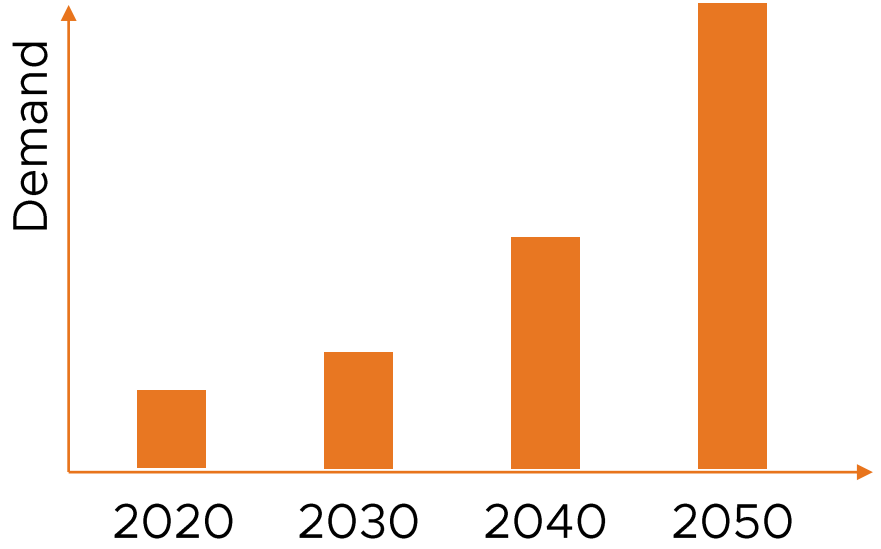
Suppliers of green hydrogen

Engaging with global majors in each sector to demonstrate and commercialise our technology in the following sectors:

- Oil and gas
- Industrial gas
- Clean energy

Demand for green hydrogen

Global demand projected to double every decade to 2050



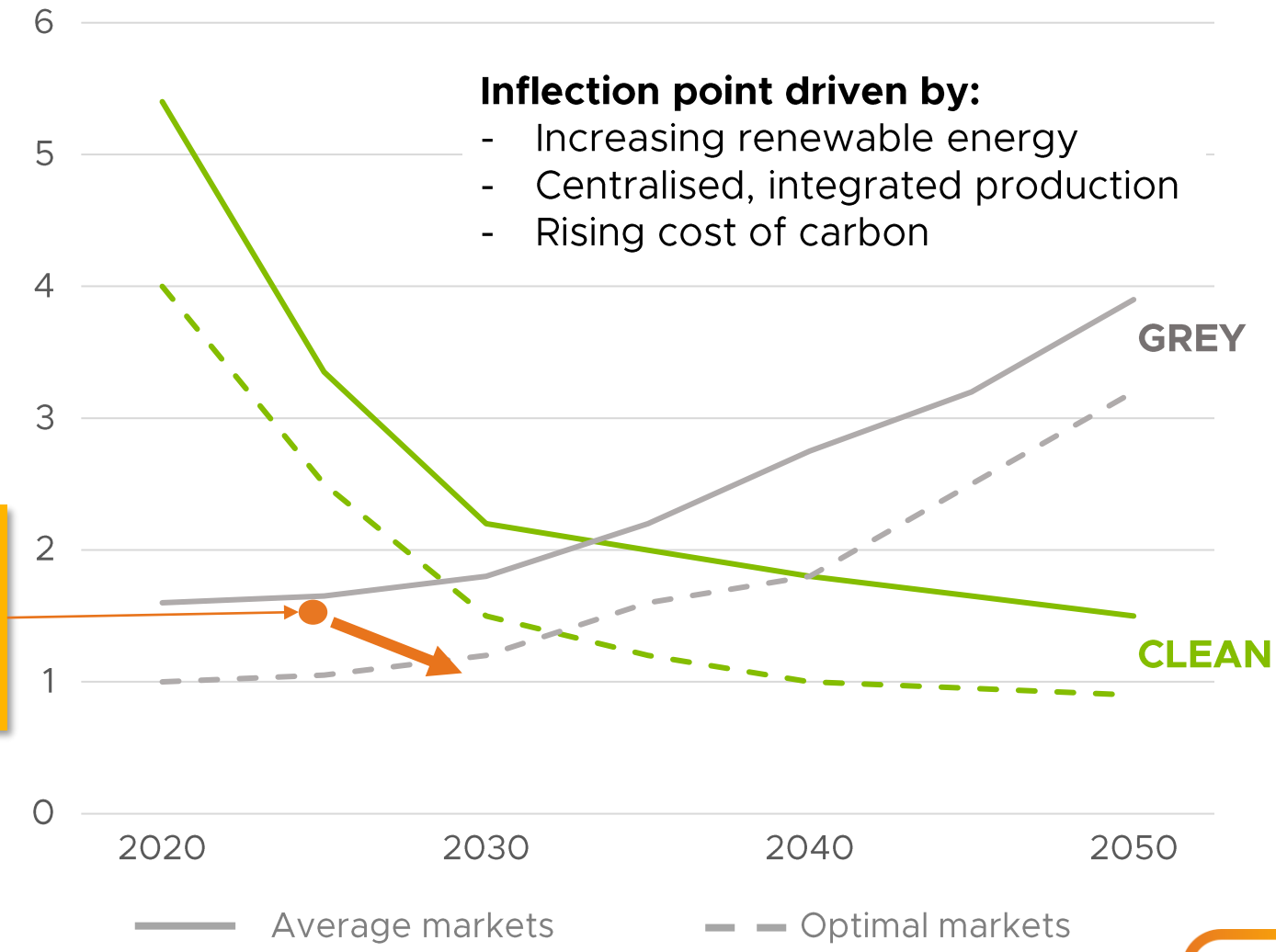
Ceres is well positioned technically and commercially to capture a significant share of the global electrolyser market by 2050

Source: McKinsey and Hydrogen Council

An inflection in the hydrogen market is expected towards the end of the decade, when clean hydrogen projected to be commercially competitive

Source: McKinsey and Hydrogen Council

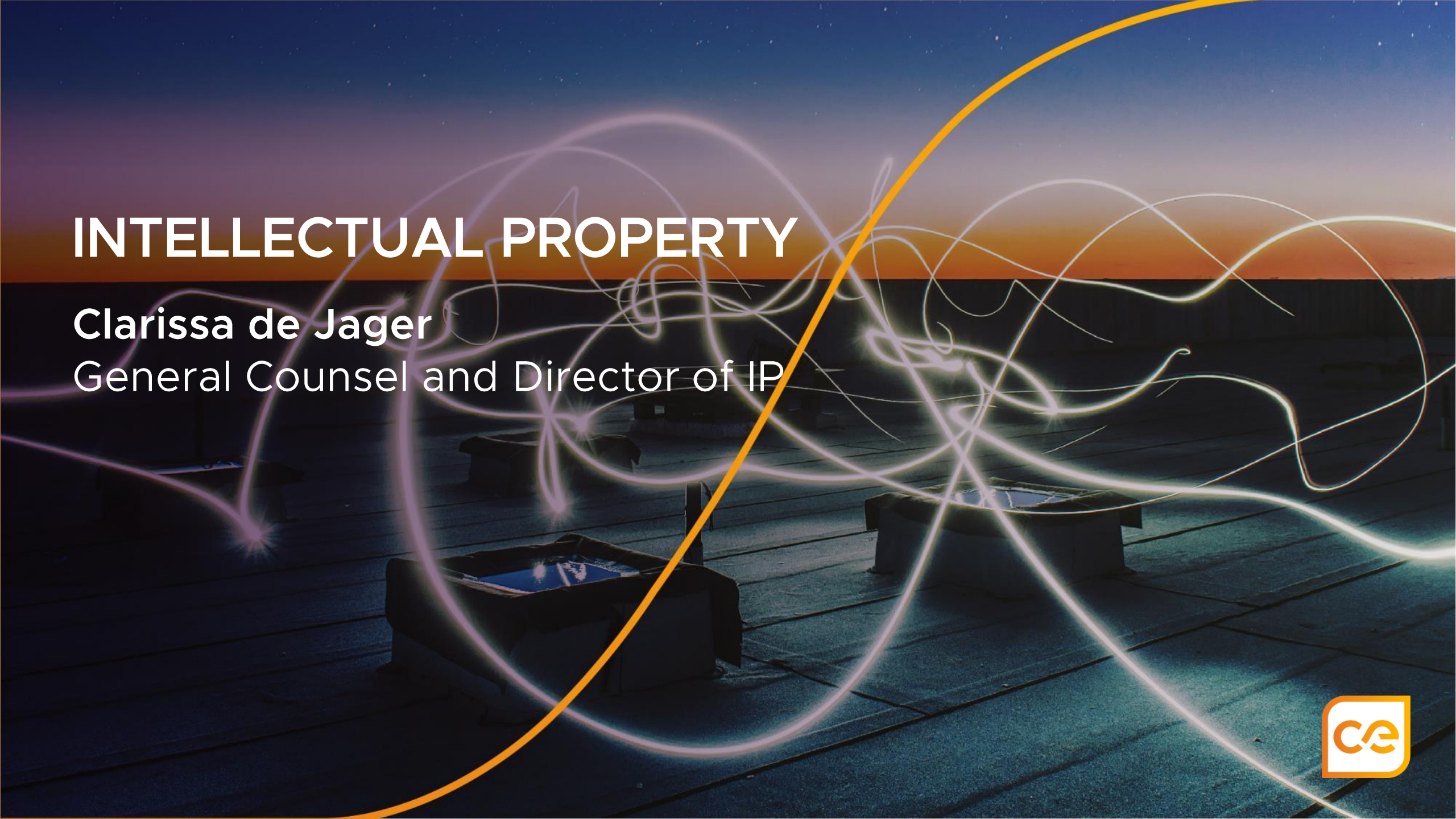
Production cost of hydrogen
USD/kg



Ceres' differentiated technology is a strong fit for this market

- Generating hydrogen at high levels of efficiency, integrated with steam, heat and clean energy, that is scalable for large centralised production
- Deployment from 2025 at a differentiated cost point, in time to target a significant share of a market projected to double every decade to 2050
- Potential to access royalty streams from significant electrolysis market, which is predicted to reach US$2.5 trillion by 2050*

*Source: McKinsey/ Hydrogen Council



INTELLECTUAL PROPERTY

Clarissa de Jager
General Counsel and Director of IP

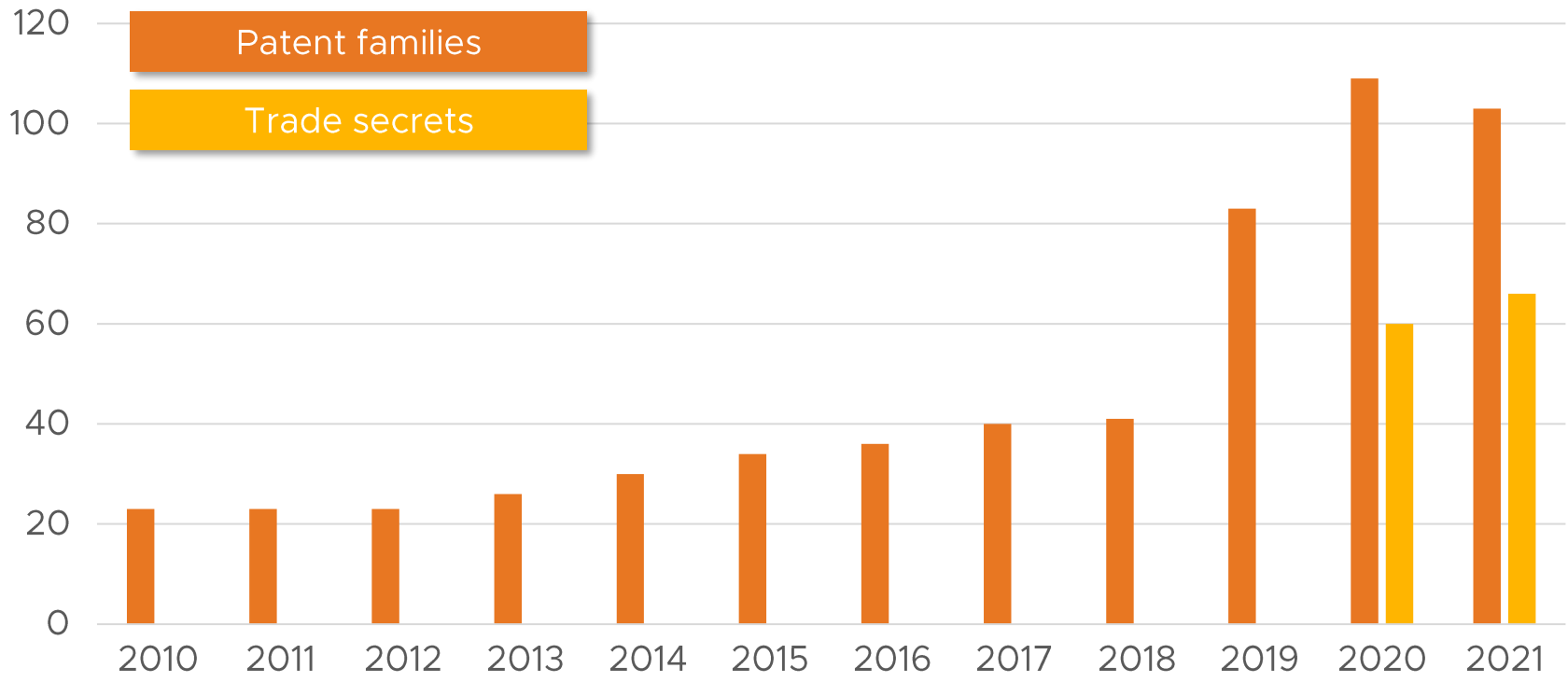
Ceres' intellectual property (IP) is highly differentiated and applies to SOFC and SOEC

- Ceres cells can be used in fuel cells, electrolysis cells, or reversible cells
- Ceres' patent filings for its chemistry and architecture support both its SOFC and SOEC activities

Ceres' IP is strong, relevant and growing...

- 103 patent families across cell, stack and system
- 37 cell and stack patent families with 36 applicable to SOEC

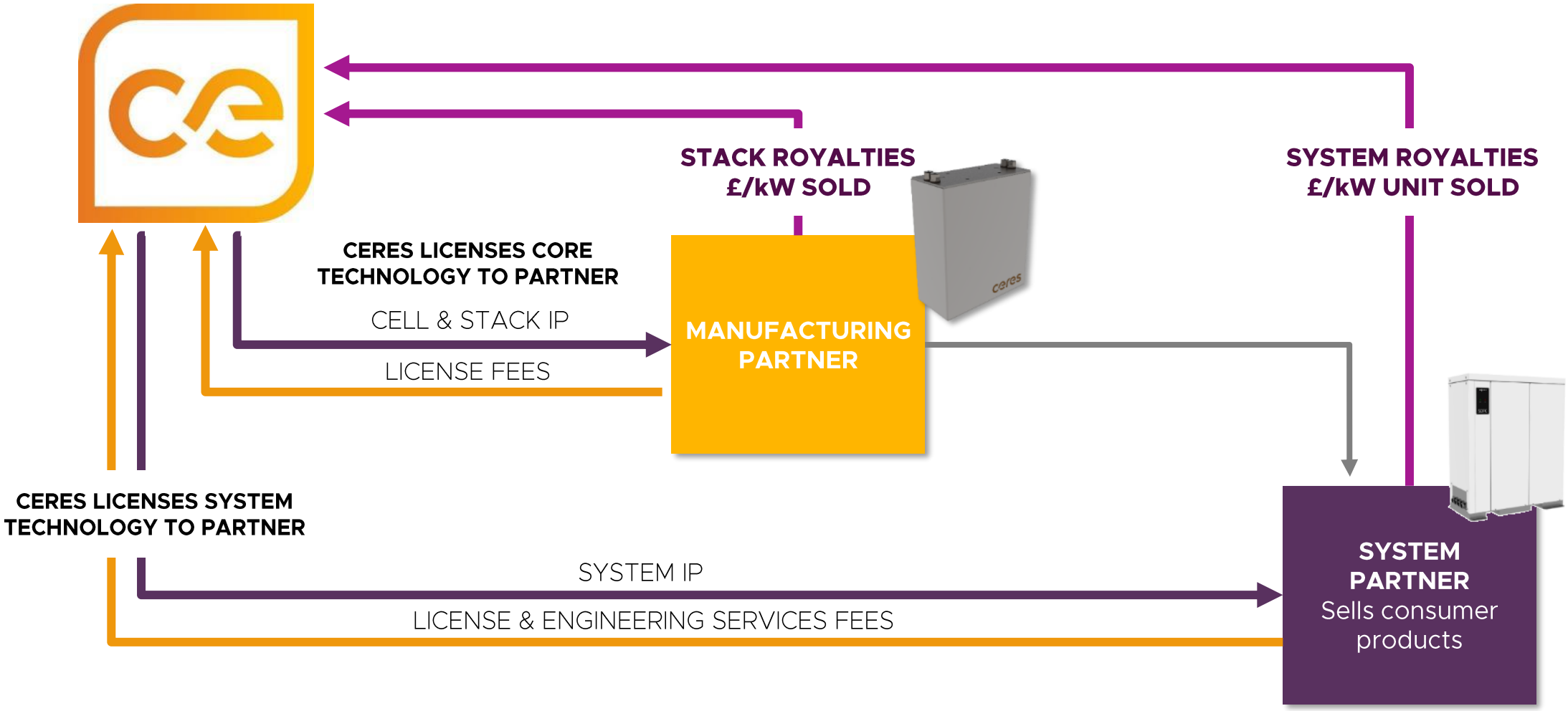
>95% of Ceres cell and stack IP is applicable to SOEC



BUSINESS MODEL

Tony Cochrane
Chief Commercial Officer

Same asset-light, licensing business model



Same partnership progression

1. Joint product development

Engineering services

WEICHAI

BOSCH

DOOSAN

HONDA

MIURA

2. Licence: system/ manufacturing

Fees for tech transfer

WEICHAI

BOSCH

DOOSAN

MIURA

3. Royalties from products sold

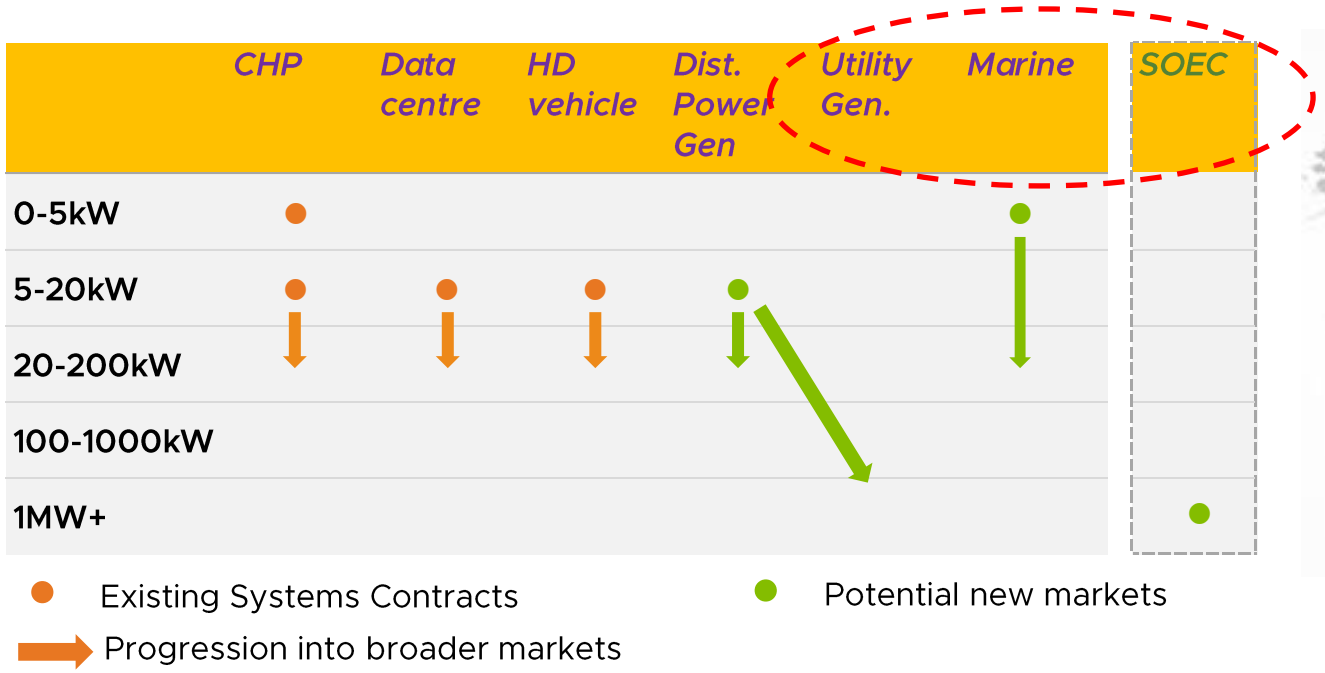
Royalties per kW

MIURA

Scaling the ecosystem into higher power and e-fuels

New applications drive demand for cell and stack production

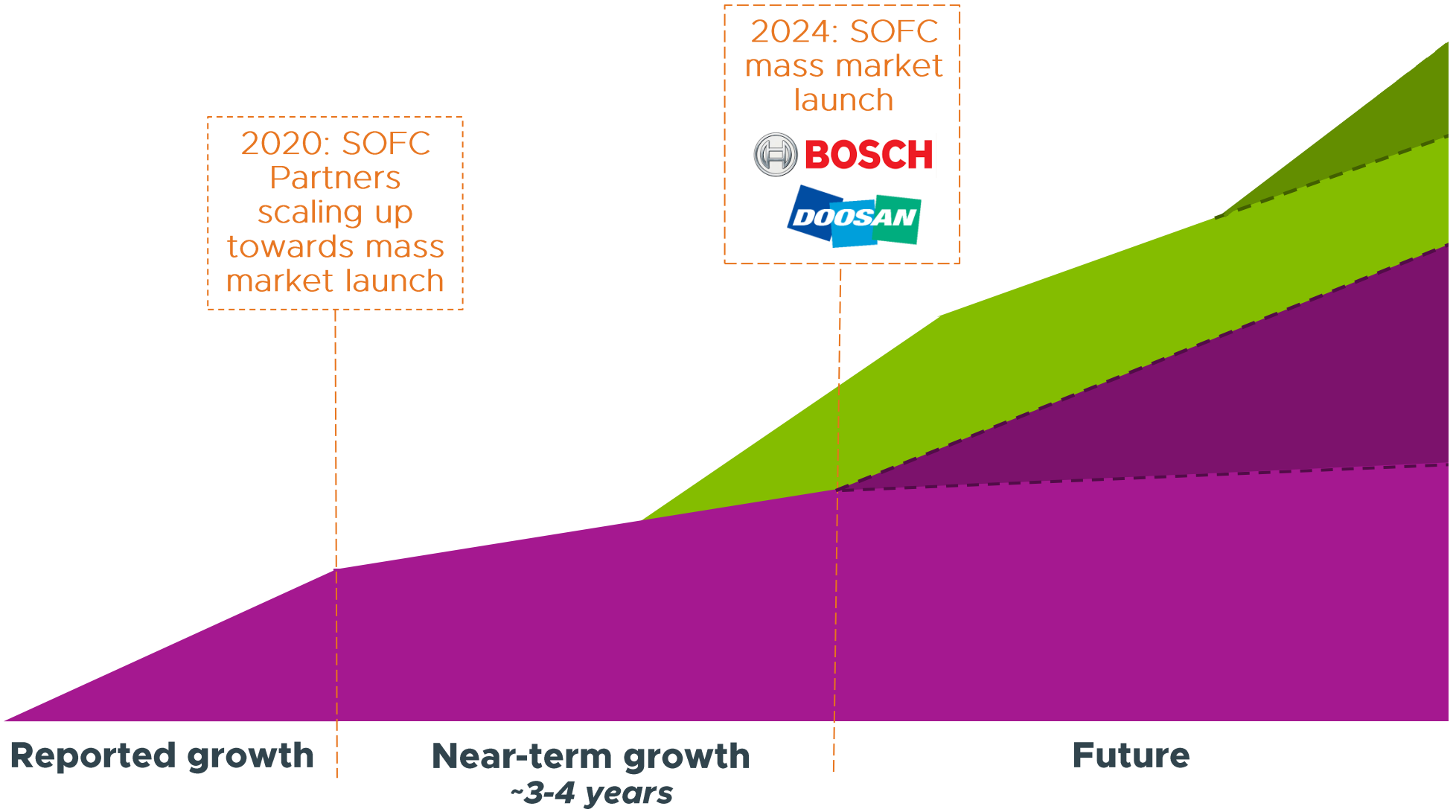
Moving into higher power systems and broadening applications in each region (through direct and shared system licensees)



Manufacturing for SOFC and SOEC

Target global manufacturing partners to supply cells and stacks to system OEMs in regions of greatest demand

Building new licensing revenues from the same business model



ceres HYDROGEN

- Royalties
- Licence fees, engineering services and hardware sales

ceres POWER

- Royalties
- Licence fees, engineering services and hardware sales

Graphic for illustrative purposes only

SOEC strategy consistent with Ceres' purpose to address climate change and to create significant shareholder value

- Highly differentiated offering for hydrogen, with distinct advantages in efficiency, coupling with processes that are high emitters of carbon dioxide today
- Builds upon leading technology position in SOFC and established global partnerships
- Deliver at scale and speed through the asset-light, licensing business model to access a much larger market
- Revenue streams that will be additive and complementary to royalties already enabled in the SOFC business

Q&A

Richard Preston
Chief Financial Officer

THANK YOU

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