JM

Johnson Matthey
Inspiring science, enhancing life

# News Release

Friday 18th September 2020, 7.00 am

## Johnson Matthey: Enabling the transition to the hydrogen economy

Today, Johnson Matthey will hold an investor and analyst call in which we will provide an insight into the role that hydrogen will play in tackling climate change, our hydrogen business and its competitive positioning, and the attractive growth opportunities we see in this area.

**Commenting on the hydrogen seminar, Robert MacLeod, Chief Executive said:**
"Johnson Matthey has been a leader in hydrogen activities for many years. We have an established and profitable business across hydrogen production and fuel cells, with leading technology, strong segment shares and a long-standing customer base.

In Fuel Cells, we are very excited about the major growth opportunities where we can apply our catalyst and pgm expertise to decarbonise transportation. In hydrogen production, we are leveraging our capabilities in grey hydrogen and methanol process technology and are commercialising blue hydrogen through the HyNet and Acorn programmes. In green hydrogen production, we are in testing with leading electrolyser players where we can further utilise our proton exchange membrane technology.

I am confident that Johnson Matthey is strongly positioned to deliver significant future growth across hydrogen as the global transition to net zero accelerates."

### Hydrogen will be key in achieving net zero and is a fast growing market

Addressing climate change remains an urgent priority. Across the globe commitments to net zero are accelerating with 53% of the world's GDP committing to net zero targets by 2050, up from 16% a year ago. As demand for cleaner energy increases, achieving net zero will require fundamental changes across our energy supply chain. Hydrogen will play a key role as it helps to decarbonise energy and transportation, and the opportunity is significant. We are seeing increasing momentum with recent policy announcements in many countries and regions including Germany, France, South Korea and the European Union, promoting greater adoption of hydrogen.

### Johnson Matthey is strongly positioned to benefit in hydrogen

With the need to address climate change and the hydrogen market expected to grow materially in the coming years, Johnson Matthey has an important role to play in enabling the transition to the hydrogen economy.

We have been a leader in hydrogen for many years and already have an established and profitable hydrogen business, with sales of c.£100 million annually across fuel cells and hydrogen production technologies. Across the group, we have core science capabilities in pgm (platinum group metal) catalysis and recycling, electrochemistry and surface chemistry that can enable fuel cell and green hydrogen production solutions and our process technology expertise underpins our success in blue hydrogen. With our leading technology, strong segment shares and established customer relationships, we are strongly positioned to benefit from this attractive market.



Issued by: Johnson Matthey Plc
5th Floor, 25 Farringdon Street, London EC4A 4AB

## Fuel cells will play a key role in the decarbonisation of transportation

We have been active in fuel cells for over 20 years and have a profitable business, with a strong position in the materials handling market as well as the emerging transportation sector.

Our business has grown strongly, with a 38% sales CAGR since 2015. Our customers include major global truck and automotive OEMs and leading players in the important and fast growing Chinese market. We are positioned across the fuel cell components value chain, which includes manufacture of catalyst coated membranes (CCM) and membrane electrode assemblies (MEA). Together with our pgm expertise, this enables us to deliver high performance solutions, optimised for specific applications. We have established manufacturing at scale and our additional capacity in the UK and China will be completed by the end of 2020/21.

Looking forward, we expect that heavy duty trucks and automotive applications will be a major opportunity and we are working on platforms due to launch over the next few years. The addressable market for CCM supply into fuel cell truck and automotive applications for Johnson Matthey is estimated to be worth c.£1 billion per annum in 2030 and more than £10 billion per annum in 2040[1].

## Strong position in hydrogen production technologies

We have a strong presence across different hydrogen production technologies. In grey hydrogen (production of hydrogen from natural gas), we have technology for the supply of catalysts and a c.40% segment share[2].

In blue hydrogen (production of hydrogen from natural gas with carbon capture), we have leading technology which is more efficient, with lower capital intensity[3] and captures over 95% of produced carbon dioxide at high pressure and purity, enabling easier transportation and storage. Our technology is already being commercialised at scale and we are involved with two high profile and world scale hydrogen projects in the UK – HyNet and Acorn. Blue hydrogen will be critical in the transition to net zero and our opportunity is primarily through the licensing of our technology and the supply of engineering and process catalysts. The addressable market for blue hydrogen for Johnson Matthey could be worth £1.5 billion to £2 billion per annum in 2030[4].

The opportunity in green hydrogen (production of hydrogen from electrolysis of water using renewable energy) is founded on our proton exchange membrane technology (PEM), our core competency in fuel cells and our expertise in pgm catalysis and closed loop offerings. We are well positioned in this space and currently testing with leading electrolyser players. The addressable market for PEM technology for Johnson Matthey could be worth £2 billion to £4 billion per annum in 2030[5].

Both blue and green hydrogen production technologies will be critical in the transition to net zero. With our established hydrogen business, knowledge of the hydrogen market and our presence across different technologies we are strongly positioned to benefit from the substantial growth expected in this market.

1. Based on LMC, KGP, Johnson Matthey, McKinsey and OEM assumptions.
2. Based on Johnson Matthey data.
3. Compared to conventional steam methane reforming technology with carbon capture and storage. *Johnson Matthey Technol. Rev., 2020, 64, (3), 357–37.*
4. Based on total hydrogen demand (Hydrogen Council, "Hydrogen, Scaling up" report, 2017); average plant size of 160kt p.a. (equivalent to twice the size of HyNet project Phase 1). Assumes c.30% of the market is blue hydrogen (Johnson Matthey, IEA, BP).
5. Assumes c.30% of the market is green hydrogen, of which the PEM share is 30-60% (Johnson Matthey, IEA, BP).

Ends

## Enquiries:


**Investor Relations**

| | | |
|---|---|---|
| Martin Dunwoodie | Director of Investor Relations | 020 7269 8241 |
| Louise Curran | Senior Investor Relations Manager | 020 7269 8235 |
| Jane Crosby | Investor Relations Manager | 020 7269 8242 |

**Media**

| | | |
|---|---|---|
| Sally Jones | Director of Corporate Relations | 020 7269 8407 |
| Simon Pilkington | Tulchan Communications | 020 7353 4200 |




Issued by: Johnson Matthey Plc
5th Floor, 25 Farringdon Street, London EC4A 4AB