Hydrogen Council

Growing momentum for hydrogen as further multinationals join global coalition

Brussels, 13 March 2018 – Hydrogen Council welcomes 11 new members from Asia, North America and Europe. Leading international oil & gas, energy, science & technology and automotive companies come on board, driving hydrogen innovation to support the energy transition and almost doubling Council membership one year on from its launch.

3M, Bosch, China Energy, Great Wall Motor, JXTG Nippon Oil & Energy Corporation and Weichai, join as steering members alongside Hexagon Composites, Marubeni, McPhy, Nel Hydrogen and Royal Vopak at supporting level. Since its launch in early 2017, the Hydrogen Council, the first of its kind CEO-led initiative, has doubled in size, now covering all key markets with members across the value chain. In addition to their ongoing individual investments and projects, this year will see Council members join forces to drive change, accelerating the pace on a global scale.

"We are delighted to welcome such impressive growth and the strong CEO-level commitment to hydrogen this demonstrates. This is corporate leadership at scale – multinationals are walking the talk when it comes to building better solutions to address the Paris Agreement climate goals and hydrogen has become an integral part of our strategies." said Dr Woong-chul Yang, Co-Chair of the Hydrogen Council and Vice Chairman of Hyundai Motor Company.

With increasing interest from policy makers and investors around the globe, the next five to ten years could see a decisive shift in deployment of hydrogen technologies, with scenarios suggesting that hydrogen technologies could contribute to meeting 18% of the world's final energy demands, avoiding 6 Gt of CO2 emissions, creating a market with revenues of 2.5 trillion dollars each year and providing 30 million jobs by mid-century[1].

Benoît Potier, Co-Chair of the Hydrogen Council, Chairman and CEO of Air Liquide said "I am pleased to see more and more leading companies around the world committing to the development of hydrogen, recognizing it as a key solution to the energy transition. Since its launch one year ago, the Council has been able to build strong momentum. Its active participation in high level international events such as the World Economic Forum, New York Climate Week, One Planet Summit and Cop23, lead to major progress engaging with policy makers and governments. Our priority in 2018 will be to continue this rapid pace working alongside global partners and international organizations to help make hydrogen an everyday reality."

Pascal MAUBERGER, Chairman and CEO of McPhy adds, "In the very favorable context of the massive deployment of hydrogen, we are delighted and proud to join the ranks of the Hydrogen Council. The fast growth of this international organization is one of the proofs that hydrogen is essential for decarbonizing our economy and reducing emissions.
In 10 years, McPhy has positioned itself as a leading company in providing advanced technologies for new uses of hydrogen. Joining the Council as a "supporting member" is a great opportunity for us to

[1] Hydrogen: Scaling Up, The Hydrogen Council, 2017

work with our peers in the large-scale deployment of the technologies and uses of # CleanEnergy hydrogen."

About the Hydrogen Council:
Launched at the World Economic Forum in Davos in early 2017, the Hydrogen Council is a first-of-its-kind global CEO initiative to foster the role of hydrogen technologies in the global energy transition. Current members include 24 leading multinationals – 3M, Air Liquide, Alstom, Anglo American, Audi, BMW GROUP, China Energy, Daimler, ENGIE, General Motors, Great Wall Motor, Honda, Hyundai Motor, Iwatani, JXTG Nippon Oil & Energy Corporation, Kawasaki, Plastic Omnium, Royal Dutch Shell, Statoil, The Bosch Group, The Linde Group, Total, Toyota and Weichai – as well as 15 dynamic players from across the value chain - Ballard, Faber Industries, Faurecia, First Element Fuel (True Zero), Gore, Hexagon Composites, Hydrogenics, Marubeni, McPhy, Mitsubishi Corporation, Mitsui & Co, Nel Hydrogen, Plug Power, Toyota Tsusho and Royal Vopak. The coalition collectively represents total revenues of over € 1.6 trillion and close to 2.5 million jobs around the world.[2]

The Hydrogen Council has published two studies to date, *How hydrogen empowers the energy transition (January 2017)* exploring the role of hydrogen in the energy transition, including its potential, recent achievements, and challenges to its deployment and *Hydrogen, scaling up (November 2017)* presenting the first comprehensive vision of the long-term potential of hydrogen and a roadmap for deployment. To find out more: www.hydrogencouncil.com.

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About our new members:
Steering members

3M is a global science company that never stops inventing. Using 46 technology platforms, our integrated team of scientists and researchers works with customers to create breakthroughs. Our inventions have improved daily life for hundreds of millions of people all over the world.

The Bosch Group is a leading global supplier of technology and services. Its Mobility Solutions business sector pursues a vision of mobility that is accident-free, emissions-free, and stress-free, and combines the group's expertise in the domains of automation, electrification, and connectivity. The fuel cell is a technology for further reducing CO2 emissions, especially in heavy commercial vehicles.

China Energy proactively explores the full value chain of hydrogen production, distribution and application, investing in infrastructure and key R&D programmes that cover areas such as hydrogen production, storage and transport, fuelling stations, fuel cells, etc. In addition, the company also participates in drafting roadmaps for hydrogen energy development in China.

Great Wall Motor Company Limited is China's largest SUV and Pickup Truck manufacturer with more than a million vehicles sold in 2017 under one of the brands Great Wall, Haval and Wey. Advancing electric propulsion including hydrogen fuel cell drive is a key focus of Great Wall Motor's R&D. Great Wall Motor is on the way to develop and roll-out high-power Fuel Cell Electric Cars and SUVs with a cost-competitive design, very low weight,

[2] Company figures from financial years 2015 to 2017.

high energy-efficiency and low carbon footprint. With a highly skilled R&D team and novel Hydrogen R&D facilities in Baoding, Hebei, China, Great Wall Motor is committed to advance cost-competitive technologies for Hydrogen Production, Hydrogen Refueling and Fuel Cell Electric Drive in China and worldwide.

Weichai, founded in 1946, is currently one of the strongest and most comprehensive auto and equipment manufacturing groups in China. It owns six global business segments of automobile business, construction machinery, powertrain system, intelligent logistics, luxury yacht and finance & after-services. Weichai is striving to develop new energy business and has set up a new energy science and technology company. After nearly 10 years of independent R&D and strategic investment reserve, Weichai now owns a R&D team of more than 100 people and competitive products, motors, batteries, electric control systems and other businesses, and is promoting the industrialization of scale. In Weichai's 2020-2030 strategy, Weichai tries to lead the global new energy industry development by 2030. At present, Weichai undertakes the major projects of hydrogen fuel cell industrialization project of China Ministry of Science and Technology and Replacing Old Growth Drivers With New Ones of Shandong Province, for which Weichai will invest 50 billion RMB to build a new energy industrial park. In the future, Weichai will make full efforts in the field of new energy and look forward to open cooperation with the most innovative enterprises in the world through the Hydrogen Council so as to contribute more to the development of new energy industry and hydrogen energy.

JXTG Nippon Oil & Energy Corporation is implementing initiatives as an energy conversion company to convert primary energies, such as crude oil, natural gas, solar and wind, into the optimal energy for delivery to consumers, such as oil products, LP gas, city gas, electricity, and hydrogen. As an energy supplier, JXTG is putting in place hydrogen refueling stations for fuel cell vehicles, working actively to apply the accumulated technologies and expertise needed for the proliferation of these vehicles. Our first commercial hydrogen station opened in December 2014, and by the end of February 2018 the number of locations had grown to 40.

Supporting members

Hexagon Composites delivers safe and innovative solutions for a cleaner energy future. We are adapting our leading composite pressure vessel technology for a wide range of mobility and storage applications. The energy transition towards a low-carbon society is constantly opening up exciting growth opportunities for us.

Marubeni is a major integrated trading and investing business conglomerate active in a broad range of products and services globally especially in the power and energy field.

McPhy “Driving clean energy forward”. In the framework of the energy transition, and as a leading supplier of hydrogen production, storage and distribution equipment, McPhy contributes to the deployment of clean hydrogen throughout the world. As a designer, manufacturer and integrator of hydrogen equipment since 2008, McPhy provides turnkey solutions tailored to our client applications: renewable energy surplus storage and valorization, fuel cell car refueling, raw material for industrial sites.

Nel Hydrogen is a global, dedicated hydrogen company, delivering optimal solutions to produce, store and distribute hydrogen from renewable energy. We serve industries, energy and gas companies with leading hydrogen technology. Since its foundation in 1927, Nel has a proud history of development and continual improvement of hydrogen plants. Our hydrogen solutions cover the entire value chain from hydrogen production technologies to manufacturing of hydrogen fueling stations, providing all fuel cell electric vehicles with the same fast fueling and long range as conventional vehicles today.

Royal Vopak is the world's leading independent tank storage company, operating a global network of marine terminals at strategic locations. Vopak is storing vital products with care, currently enabling the delivery of oil, chemicals, gases, LNG, biofuels and vegoils. The company is listed on the Euronext Amsterdam stock exchange and employs an international workforce of 5,700 people.