Hydrogen Council

Global hydrogen ecosystem unites in San Francisco and invites technology leaders to join forces for energy transition

53 energy, transport and industry companies host 'Global Hydrogen Leaders Forum' at Global Climate Action Summit and show how hydrogen can power digital innovation

San Francisco, 13 September 2018 - The Hydrogen Council comes together in San Francisco today for its third annual CEO event, the Global Hydrogen Leaders Forum. An official affiliate of the Global Climate Action Summit (GCAS), the Forum provides an opportunity for industry executives to engage with stakeholders to drive large-scale commercialization of hydrogen worldwide.

Dr. Woong-Chul Yang, Vice Chairman of Hyundai Motor Company and Co-chair of the Hydrogen Council states, *"The Hydrogen Council's third CEO event is a testament to how far we have come since the launch of this initiative about 18 months ago. More than fifty top industry leaders are here today to show hydrogen has a role to play and we need to act now to get it to scale and truly enable the energy transition. This transition needs to be sustainable environmentally, financially and socially, and hydrogen will help ensure it ticks all those boxes."*

To mark its presence at the heart of tech innovation in California, the Hydrogen Council has also launched a new discussion paper – *Hydrogen Meets Digital* – to investigate four exemplary applications that can particularly benefit from hydrogen. Developed with analytical support from McKinsey, it demonstrates how hydrogen and digital technologies can work hand-in-hand to drive our energy transition.

The report highlights how hydrogen's unique benefits can address some of the most pressing energy challenges facing tech innovators today. In the coming years, while energy efficiency gains are reducing overall energy demand, energy demand for digital applications such as data centers is expected to double until 2050. This implies the need for an energy carrier that can take renewable power, channel it, and then release energy when needed. Hydrogen and batteries are both essential to achieving this. Hydrogen, with its 10x higher energy density and 20x faster refuelling than mainstream technologies, is well suited for such applications. It can be flexibly produced, smoothing out imbalances in electricity demand and its longer range can result in reduced wait times, increased utilization, and reduced infrastructure requirements.

By 2030, hydrogen technologies could power up to 1.5 million **autonomous taxis**, 700,000 **autonomous shuttles**, 8,000 **vertical take-off and landing taxis** (VTOLs), 3.6 million **delivery trucks** and provide up to 1 TWh of backup power for **data centres**[1]. As a result, this digital future could grow the world's hydrogen market, in addition to the applications highlighted in the Hydrogen Council Report *Scaling Up* by another **7 million tons of annual hydrogen demand** and the use of **6.4 million fuel cells by 2030**[1].

"*Hydrogen will play a major role in the energy transition, but it is also key to power the digital revolution. We invite tech leaders to consider hydrogen solutions for digital applications. Together, we can deliver concrete solutions while ensuring a sustainable future.*" said Benoit Potier, CEO and Chairman of Air Liquide and Co-chair of the Hydrogen Council.

[1] *Hydrogen meets digital, Hydrogen Council, 2018, report prepared for the Global Climate Action Summit*

Kawasaki is working to develop and commercialize infrastructure technologies needed to build a hydrogen energy supply chain, ranging from production to transportation, storage, and utilization.
In April 2018, we achieved the world's first delivery of heat and power, generated exclusively by hydrogen in a city area of Kobe[2]. Also a pilot demonstration will be in operation in 2020, to validate hydrogen supply chain between Japan and Australia via liquefied hydrogen bulk carrier[3]. In 2018, financial support from Australian and Victorian State Governments was decided and we are now in the construction phase both in Australia and Japan.
Kawasaki will continue to work on developing technologies needed to realize the hydrogen society and satisfy the growing global hydrogen demand and provide the world with a sustainable, safe, stable and affordable fuel of the future.

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 33 leading multinationals – 3M, Airbus, Air Liquide, Air Products, Alstom, Anglo American, Audi, BMW GROUP, China Energy, Cummins, Daimler, EDF, ENGIE, Equinor, Faurecia, General Motors, Great Wall Motor, Honda, Hyundai Motor, Iwatani, Johnson Matthey, JXTG Nippon Oil & Energy Corporation, Kawasaki, KOGAS, Plastic Omnium, Royal Dutch Shell, Sinopec, The Bosch Group, The Linde Group, thyssenkrupp, Total, Toyota and Weichai– as well as 20 dynamic players from across the value chain – AFC Energy, Ballard Power Systems, Faber Industries, First Element Fuel (True Zero), W. L. Gore, Hexagon Composites, Hydrogenics, Marubeni, McPhy, Mitsubishi Corporation, Mitsubishi Heavy Industries Ltd., Mitsui & Co, Nel Hydrogen, Plug Power, Re-Fire Technology, Royal Vopak, Southern California Gas, Sumitomo Mitsui Banking Corporation, Sumitomo Corporation and Toyota Tsusho. The coalition collectively represents total revenues of over €1.8 trillion and close to 3.8 million jobs around the world.[4]

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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[2] "Development of smart community technology by Utilization of Hydrogen CGS" (2016-2019) supported by NEDO

[3] "Demonstration Project for Establishment of Mass Hydrogen Marine Transportation Supply Chain Derived from Unused Brown Coal" (2015-2020) supported by NEDO

[4] Company figures from financial year 2017.