Worldwide Implementation: The Hydrogen Council

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DOE Hydrogen and Fuel Cell Technical Advisory Committee

The Hydrogen Council

The Hydrogen Council

- A **global CEO-level** initiative, launched at the World Economic Forum 2017, in Davos, January 2017

- With the ambition to:
  - **Accelerate their significant investment** in the development and commercialization of the hydrogen and fuel cell sectors.
  - **Encourage key stakeholders increase their backing** of hydrogen as part of the future energy mix with appropriate policies and supporting schemes.

- Composed of leading energy, transport and industry companies **with a united vision and long-term ambition for hydrogen to foster the energy transition**

- Membership **increased** from 13 steering members to **31 Steering members and 22 supporting members**
- From **13 countries**, covering three main regions : Europe, Asia and North America

- Co-chaired in 2018 by Air Liquide & Hyundai

http://hydrogencouncil.com/

The Hydrogen Council

What are the objectives of the Hydrogen Council?

- To increase visibility of hydrogen solutions
- To advocate for the role of hydrogen in helping to meet climate goals, energy security and competitive targets.
- To work with key stakeholders, such as policy makers, the business community, international agencies and civil society, to achieve our goals.

How will this be achieved?

- The Hydrogen Council is an international advisory entity providing a high-level vision for:
  - the essential role of hydrogen for an energy transition
  - the plan to deliver this ambition worldwide
  - the challenges to overcome for large scale deployment

- To work alongside the global investment community to transition towards a low-carbon economy that will need a paradigm shift and large scale investments.

- Coordinating and funding studies about hydrogen, provide concrete data and facts to support the further development and serve as a point of reference for key stakeholders world-wide.

The Hydrogen Council

Davos Forum

Global CEO-led initiative to foster the role of hydrogen in global energy transition

WORLD ECONOMIC FORUM

COMMITTED TO IMPROVING THE STATE OF THE WORLD

Bringing together leading energy, transport & industry multinationals around the world

Providing high level vision

- on the plan to deliver this ambition worldwide
- on the challenges to overcome for large scale deployment

KEY RESULTS (1/5): Expanded partnership to 53 companies …

The Hydrogen Council now brings together an impressive group of 53 leading companies, accounting for 3.8 million jobs and €1.8 trillion in revenue from across 11 different countries. The group has more than quadrupled in size since launching at the World Economic Forum just 24 months ago. This rapid expansion – with influential players entering from across geographies and aspects of the value chain – reflects surging interest in global hydrogen deployment.

KEY RESULTS (2/5): …and mobilized their CEOs/Chairmen

Hydrogen Council

"If you are passionate about what you think is right, keep moving forward. I am convinced that we can create the right conditions for mass adoption of hydrogen for a better society for our children."

Takeshi Uchiyamada, Chairman Toyota Motor Corporation & Co-Chair of the Hydrogen Council

Hydrogen Council

"Alstom was among the founding ers of the Hydrogen Council use we are convinced that en is a real game-changer in transition towards a clean mobility system."

nri Poupart-Lafarge, CEO , Alstom

Hydrogen Council

"Hydrogen is the cleanest fuel available and its ability to provide power is limitless [...] Once businesses integrate hydrogen fuel cells, they quickly see the impact with improved productivity and lower costs. In an ideal world, new programs will be introduced to encourage additional research to further optimize cost, extraction, and storage."

ANDY MARSH
CEO, Plug Power

Hydrogen Council

"Existing inexhaustibly on the earth, hydrogen is the "ultimate clean energy" which doesn't emit CO2 when it is used. I don't think it's an exaggeration to say that hydrogen will solve energy issues and environmental issues simultaneously, and may cause a "new industrial revolution."

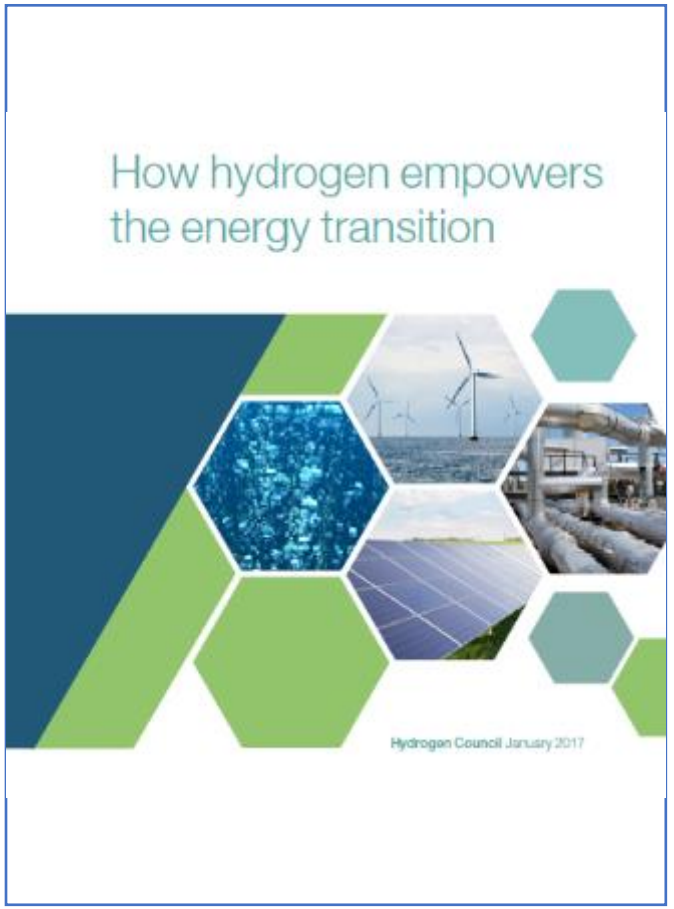
Akiji Makino, Chairman and CEO, Iwatani Corporation

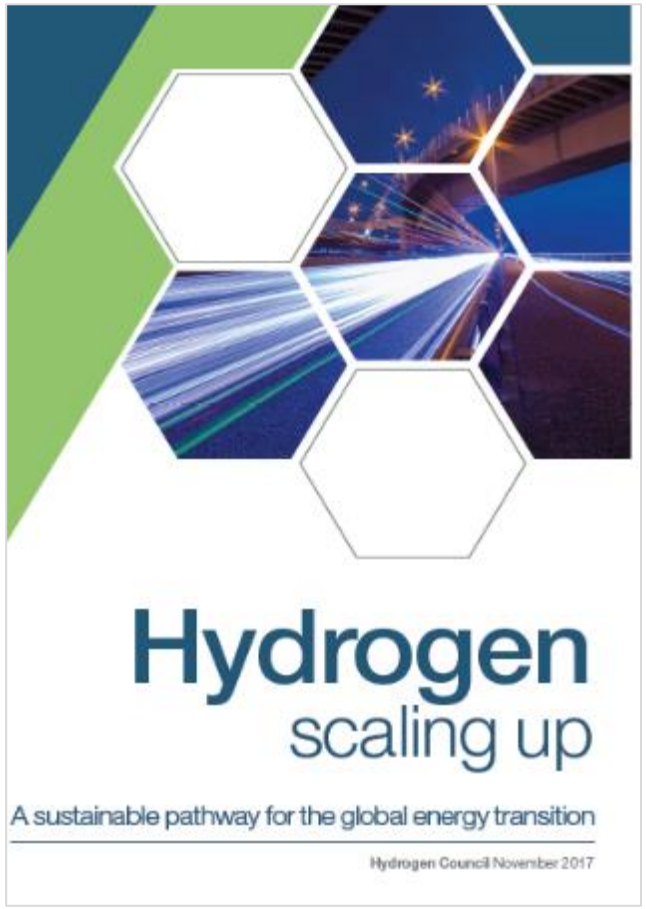
Hydrogen Council

"We were all scattered in different countries and trying to promote hydrogen as a vector for energy for the world, and we realised [...] that we had to somehow join forces [...] and we decided to create in Davos this year in 2017 the Hydrogen Council."

Benoit Potier, CEO of Air Liquide and Co-chair of the Hydrogen Council

KEY RESULTS (3/5): Demonstrated a joint vision





SOURCE: Hydrogen Council, IEA ETP Hydrogen and Fuel Cells CRS, National Energy Outlook 2016

Delivered **two studies** to show the role of hydrogen technologies in the global energy transition and the benefits of hydrogen's scale deployment in a 2°C scenario.

KEY RESULTS (4/5): Engaged global investors & policy-makers

KEY RESULTS (5/5): Grown H2 voice in the media

Materials not available for publishing.

Our 2018 priorities: Activating intl. public-private community

CLEAN ENERGY MINISTERIAL
Accelerating the Global Clean Energy Transition

WORLD ECONOMIC FORUM

iea International Energy Agency

The members of the Hydrogen Council are working together to foster **high-level support for scale deployment of hydrogen technologies** to play an essential role in the global energy transition.

A GLOBAL COMMITMENT TO RENEWABLES

We call on governments to build a global alliance that will help us deliver on

an ambitious goal of decarbonizing 100% of hydrogen fuel used in transport by 2030.

Transport may be our first target—but with the right level of support, we will see positive effects across many sectors.

GLOBAL CLIMATE ACTION SUMMIT

Hydrogen Council

The Hydrogen Council Co-chairs, Benoit Potier, CEO and Chairman of Air Liquide and Dr Woong-Chul Yang, Vice Chairman of Hyundai announced a commitment on-stage at the closing plenary of GCAS on 14th September 2018.

"The Hydrogen Council, a global CEO coalition bringing together 50+ leaders in the energy, transport and industry space, is committed to an ambitious goal of ensuring that 100% of hydrogen fuel used in different modes of transportation is decarbonised by 2030. We are therefore calling on governments to build a global alliance that will create the necessary regulatory frameworks to help make this commitment a reality. Transport may be our first target, but with right level of support we will see positive effects across many sectors. We believe hydrogen can play a key role in the clean energy transition and we are ready to work together with governments to help create the right technical, financial and legislative environment that will enable decarbonised hydrogen to scale up."

HYDROGEN MEETS DIGITAL – THE MOST RECENT STUDY BY THE HC

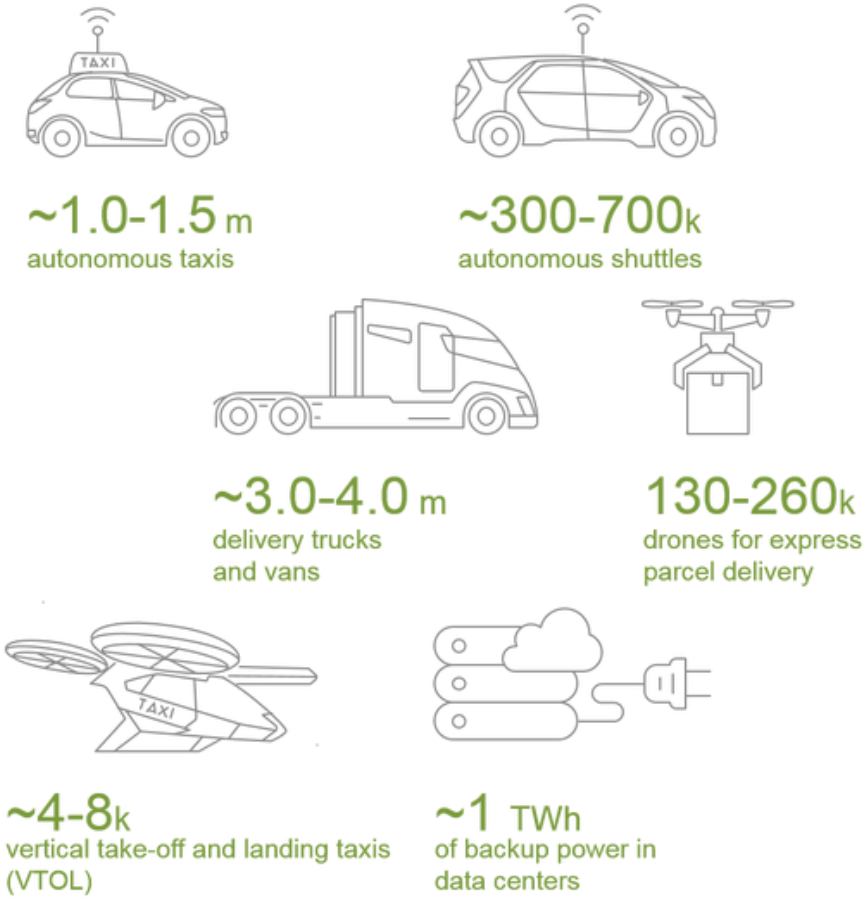
Global digital revolution creates new energy demands

How hydrogen can help
Two main technologies – batteries and hydrogen – can provide the required storage for renewables. While often portrayed as competitors, they are, in fact, complementary for different applications.

Four specific promising use-cases are explored in this discussion paper:

- **Autonomous taxis and shuttles**
- **Digitally enabled freight chains**
- **VTOL taxis**
- **Data centers**

In 2030, hydrogen could power …



Hydrogen Scaling Up

Hydrogen
scaling up

A sustainable pathway for the global energy transition

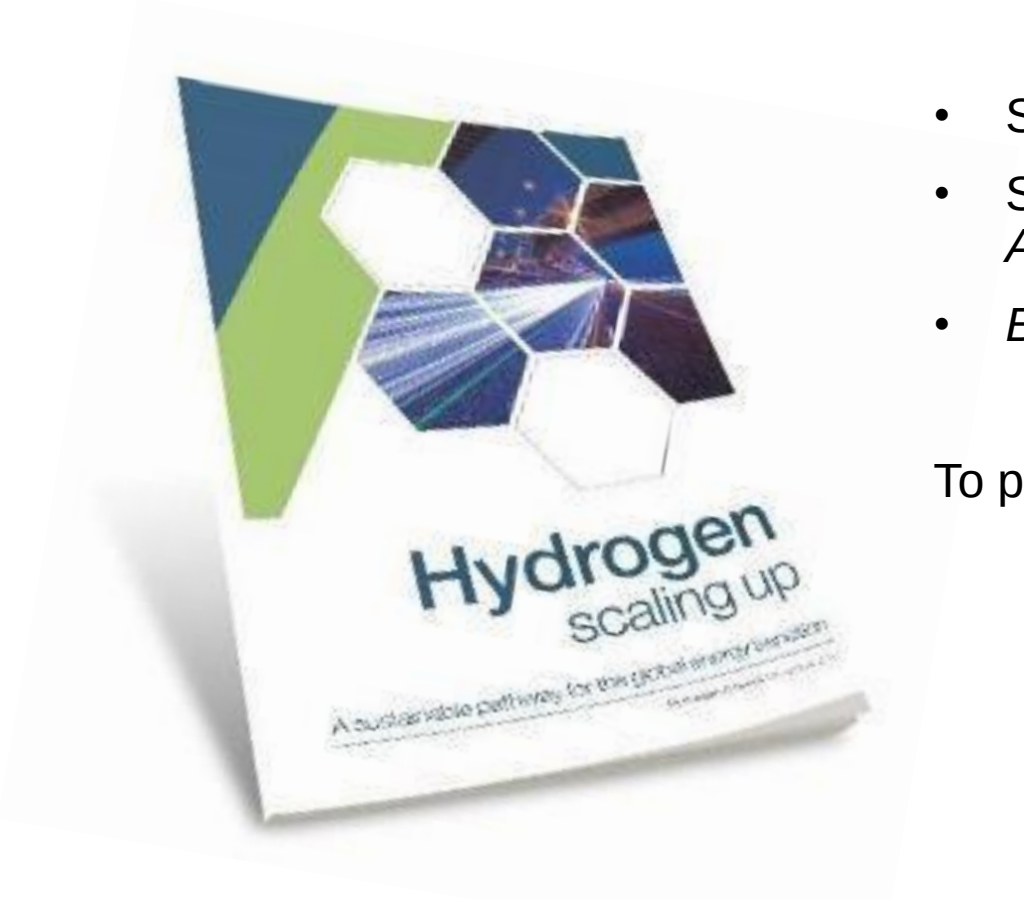
DR. MARTIN LINDER| Partner | McKinsey & Company

Hydrogen Scaling Up – a US Study

FCHEA
Fuel Cell & Hydrogen Energy Association

Join us in developing a an industry led, US specific study on the potential for US markets in Hydrogen Energy

- Build upon the success of the Hydrogen Council's the global study: *Hydrogen Scaling Up*
- A US focus with forecast for market size and opportunities across all energy sectors



- Study to be performed by *McKinsey & Company*
- Study administered by the *Fuel Cell and Hydrogen Energy Association*
- *Broad industry participation*

To participate or for further information: info@fuchea.com

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