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A "Paradigm Shift" in H2 Logistics

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Abstract

The time has come for a paradigm shift in Hydrogen Logistics – to embrace Solid H2.

By Solid H2, we mean hydrogen embedded (or "packaged") in a solid chemical form. From point of production till delivery to the end user, all logistic operations of the hydrogen is conducted in the form of Solid H2 until it is delivered at the end user site. There, H2 gas is released from the Solid H2 to be utilized in its respective applications (e.g. powering a hydrogen fuel cell).

The paradigm shift is underlined by the following key drivers:

(A) Cost per kWh of electricity is falling, especially renewable energy (wind and solar). Generating renewable energy ("RE") in the most productive locations on the planet will also bring cost per kWh of RE even lower – and adopting Solid H2 makes it transportable and accessible using existing available transportation infrastructure.

(B) We have developed an efficient method of releasing H2 Gas in large quantities from Solid H2 at user location that does not require huge Capex investment. Delivering H2 on demand also removes the safety hazard which comes with bulk storage of high pressure H2 gas.

(C) The true cost of hydrogen logistics (in the form of HPG or LH2) is way higher than popularly believed. After years of infrastructure and fuel subsidies (California, Korea, Japan, EU and China) the number of hydrogen refilling stations ("HRS") are still grossly inadequate.

(D) Safety issues relating to hydrogen gas handled and/or stored in bulk under high pressure has come to the forefront with a number of high-profile mishaps – in California, Norway, Korea as well as China. These episodes have made it much more difficult for governments to deploy more HRS, especially in locations which are densely populated. Delayed implementation means many years of additional subsidies.

(E) The need for immediate and decisive action on Climate Change has gotten much more critical … and time is running out (see the United Nations IPCC report Sept 2019). Fast tracking green hydrogen from RE has never been more critically urgent and Solid H2 can play an instrumental role in making this happen.

Biography

Keen holds many other patents in the field of Biochip and Computer Technologies. 30 years career was built on his ability to identify, analyse business challenges and identify opportunities. He has the skill to gaining access to decision makers, quickly gain trust and mitigate risks and bring project to a timely closure. He understands business and political practices in USA and Asia, especially China. Keen was born and raised in Malaysia. Graduated with Diploma(s) in Marketing, Manufacturing & Cost accounting and Accounting in England. Keen is married with 2 children and resides in Westchester, NY. He is fluent in English, Chinese (various Chinese dialects).

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