

Hydrogen Storage and Infrastructure

SEP | 2020
BULLETIN



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WHAT'S INSIDE!

What are the new advancements in hydrogen storage?

What are the new developments in hydrogen infrastructure?

Which countries are now adopting hydrogen?

What is new about Hydrogen in Maritime?

Which countries are devising regulations and policies around hydrogen economy?

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'Smart tank' stores hydrogen in your home cellar or garage

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Emerson unveils flow meter for demanding hydrogen applications

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Plans for Czech Republic's first 3 hydrogen stations confirmed

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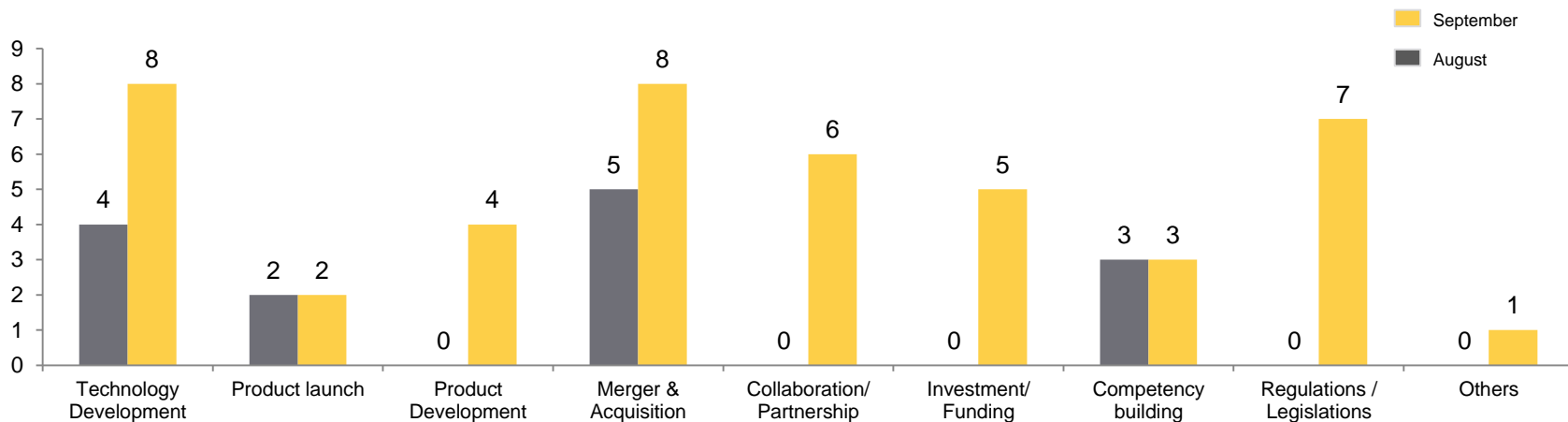
Hydrogen Dual-fuel Engine Gets Maritime AiP

06



Development of hydrogen around the globe

Comparative analysis of developments in H₂ storage and infrastructure – August 2020 Vs. September 2020



Key Takeaways

- Many governments are seen devising strategies and regulations around hydrogen to contribute towards the goal of reduced emissions. Some major fundings for hydrogen infrastructure development were drawn. Overseas collaboration of governments is indicative of being replicated to industry players.
- Technological development for integrated hydrogen storage and efficient dispensing were observed.
- Collaborations for developing energy storage, refueling stations and fuel cells increased considerably.



Expert says

“The development of low-cost hydrogen storage translates to untold benefits for our homes and businesses, with Manilla the first location in Australia to demonstrate its commercial potential.” – Llewellyn Owens, Providence’s Chief Technology Officer

02 September 2020

‘Smart tank’ stores hydrogen in your home cellar or garage



- Researchers at Frankfurt UAS are developing a ‘smart hydrogen tank’, which should make it possible to install it in home cellars or garages.

Researchers working on the development of a ‘smart tank for hydrogen’ believe that this will simplify hydrogen production. Hydrogen would be produced using electrolysis in a small-scale system that runs on renewable energy. The system would be small enough to be installed in the cellar or garage. Such a system would make it possible for private households to produce and also store their own CO₂-neutral energy.

It will be interesting to wait for the prototype and the type of concrete used for hydrogen storage.

Read this story 

10 September 2020

Providence unveils plan for 1.2GWh of hydrogen storage to power regional communities



- Providence Asset Group has unveiled plans for a \$500m portfolio of solar farms with 30MWh advanced hybrid storage technology which will each have hydrogen storage and traditional Li-ion batteries attached to each

The Australian renewable energy company’s ‘NSW Master Plan’ includes 28 solar farms across the state. The hybrid battery storage system developed at UNSW is known as H2Store.

The technology is a compact and transportable hydrogen storage solution that has proven highly effective in storing and generating renewable energy, reducing the fluctuation of renewable generation and increasing confidence in the security of energy supply.

Read this story 



Expert says

“We would like to follow up this project with other hydrogen activities and implementations not only in the Czech Republic but also in Poland and Slovakia where our group is actively present.” – Václav Holovčák, member of the Board of Directors of the Bonett Group

14 September 2020

Emerson unveils flow meter for demanding hydrogen applications



- Emerson has introduced a new Micro Motion™ Coriolis flow meter designed for high-pressure hydrogen dispensing and chemical injection applications.

The Micro Motion Coriolis HPC015 flow meter is specially designed for use in the high-pressure hydrogen dispensing market. It is capable of a flow accuracy margin of 0.5% for gas and 0.1% for liquid mass flow measurement. The HPC015 is an extremely accurate, safe and reliable solution to measure flow at high pressures.

The new flow meter can manage costs in large-scale custody transfer applications, such as public transport systems.

Read this story 

22 September 2020

Plans for Czech Republic’s first 3 hydrogen stations confirmed



- Czech Republic’s first three public hydrogen stations will be rolled out next year by Unipetrol Group and Bonett Group.

The two companies have signed an agreement for the construction of the stations which will start at the existing Benzina Orlen Group sites in Prague-Barrandov and Litvínov.

Hydrogen will complement the current trend of battery electromobility over time and will play an increasingly important role not only in the field of personal mobility but especially in the field of public transport and transport services in the Czech Republic area.

Read this story 



21 September 2020

Hydrogen Dual-fuel Engine Gets Maritime AiP

BEHYDRO

- BeHydro's hydrogen-powered dual-fuel engine with a capacity of 1 MW has received Approval in Principle (AiP) from Lloyd's Register (LR).

BeHydro, a joint venture between Compagnie Maritime Belge (CMB) and Anglo Belgian Corporation (ABC). The new engine with dual fuel technology offers the potential to reduce CO2 emissions by up to 85%. BeHydro is now planning to develop larger engines of up to 10 MW.

BeHydro is developing a mono-fuel hydrogen engine that will be ready by the second quarter of 2021. BeHydro has already received its first order for two 2-MW dual-fuel engines for a hydrogen tugboat to be deployed by the Port of Antwerp.

Read this story 

Expert says

"This collaboration with CMB and ABC is an important development in demonstrating the potential of hydrogen as a fuel for shipping. This Approval in Principle demonstrates LR's commitment to helping the industry to adopt safe, reliable and economic new technologies and processes to meet decarbonisation ambitions."—
Andy McKeran, LR's M&O Commercial Director

Hydrogen in Maritime



ITALY

- [Fincantieri](#), an Italian ship-building firm, has started building a hybrid ship that will use hydrogen and storage systems along with diesel fuel.
- The Zeus — Zero Emission Ultimate Ship — will be equipped with two electric engines, two diesel generators plus batteries and a 130KW cell that will be fuelled by about 50kg of hydrogen.



HUNGARY

- A boat with hydrogen fuel cells and developed by [Kontakt-Elektro](#) was showcased at the Balaton Boat Show in Hungary.
- There are no hydrogen fuelling stations in Hungary yet but the introduction of hydrogen powered vehicles will attract the attention of market players.



KEY TAKEAWAYS

- It can be observed that hydrogen in maritime is gaining traction.
- Hydrogen as a fuel is now being considered for maritime. Hydrogen fuel cells on small boats are launched and this may indicate an emission free marine transport.
- Components of ship, like engines, are now modified to accommodate hydrogen as driving fuel, partly or fully.

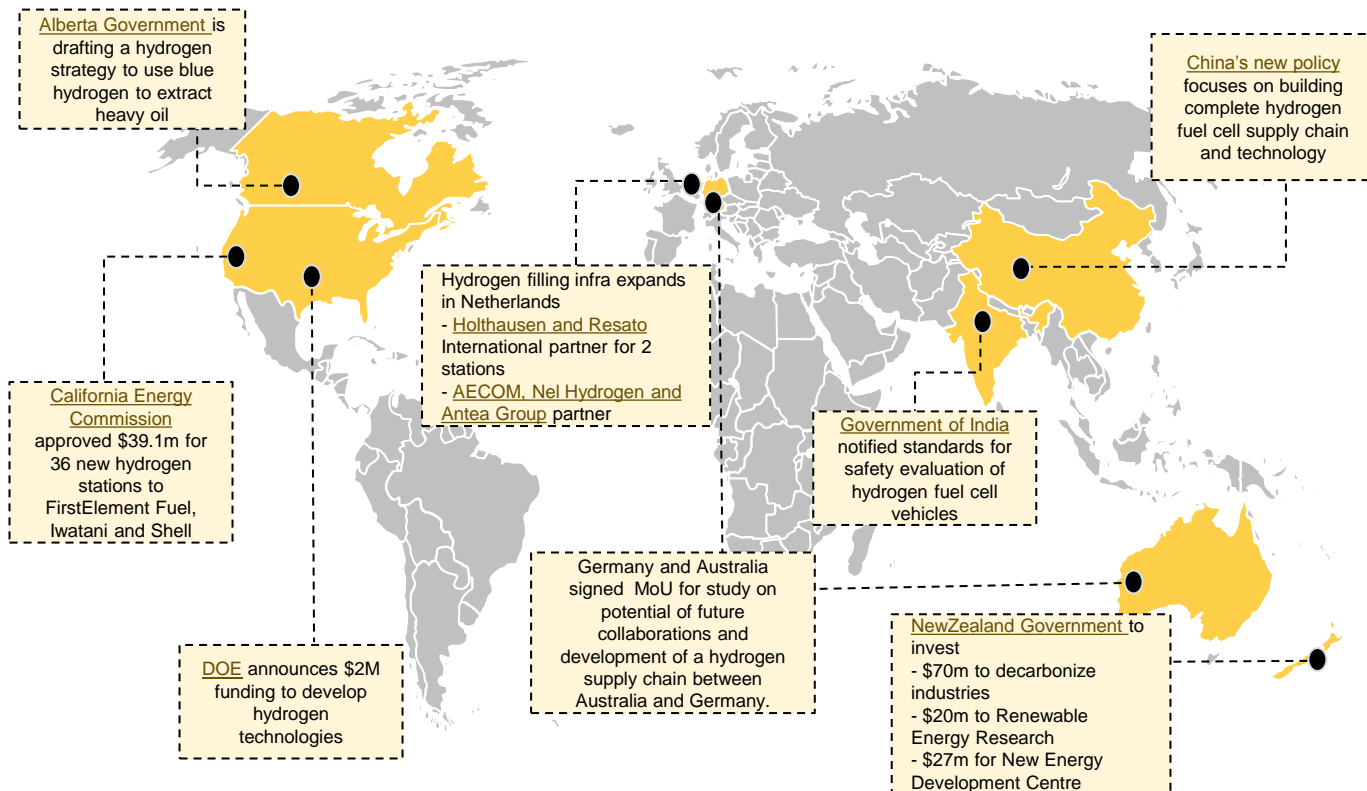
SPOTLIGHT



- It was observed that China and India took progressive steps towards incorporation of hydrogen fuel cell vehicles.
- U.S and Netherlands have made considerable investments for promoting hydrogen technologies
- British Columbia and Czech Republic are some new players in the hydrogen infrastructure market.
- Inter-country alliance to study collaboration potential in hydrogen supply chain indicates that collaborations that leverage infrastructure and technology will be the way forward.

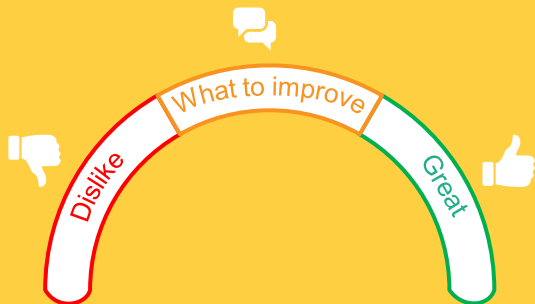
Development of hydrogen around the globe

Decisions for Policies, Strategies and Standards for incorporation of hydrogen into the economy were taken



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