



H2Symposium 2019: Volume

Not why - When, where and how

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Where Hydrogen?



Next Generation FCEV





When Hydrogen?



...gtende h
...likola får
...er ikke ti

...n velger Nikola nors
...som attpåtil får nor
...tanse, fremoverlent
...og et marked som



World premiere: Alstom's hydrogen trains enter passenger service in Lower Saxony



For the time being, it is travellers in EVB's Elbe-Weser network who can look forward to a world-first journey on the low-noise, zero-emission trains that reach up to 140 km/h. On behalf of LNVG, the Coradia iLint trains will be operated on nearly 100km of line running between Cuxhaven, Bremerhaven, Bremervörde and Buxtehude, replacing EVB's existing diesel fleet. The new trains will be fuelled at a mobile hydrogen filling station. The gaseous hydrogen will be pumped into the trains from a 40-foot-high steel container next to the tracks at Bremervörde station. With one tank, they can run throughout the network the whole day, thanks to a total autonomy of 1000 km. A stationary filling station on EVB premises is scheduled to go into operation in 2021, when Alstom will deliver a further 14 Coradia iLint trains to LNVG.

Dr. Bernd Althusmann, Lower Saxony's Minister of Economy and Transport, whose department has supported LNVG's purchase of another 14 hydrogen trains with more than €81 million, is impressed:

HYUNDAI MOTOR AND H2 ENERGY WILL BRING THE WORLD'S FIRST FLEET OF FUEL CELL ELECTRIC TRUCK INTO COMMERCIAL OPERATION

September 19, 2018

- Hyundai Motor, in cooperation with H2 Energy, to provide 1,000 fuel cell electric trucks to Swiss commercial vehicle market, beginning 2019 through to 2023
- Hyundai further expands its global leadership in the field of fuel cell technology with plans to commercialize fuel cell electric trucks for the first time in the world
- New fuel cell electric truck expected to travel a range of approximately 400km in real-life driving conditions
- The truck boasts a distinctive design befitting of an eco-friendly vehicle

How Hydrogen?



INVITATION FOR COOPERATION

Business mapping and hydrogen fleet procurement

We hereby invite you to a joint cooperation where the objective is to establish a fleet of hydrogen vehicles and vessels accumulated through a collection of initiatives throughout Norway. This will be achieved through identification and gathering of actors within the transport of goods, people, maritime sector and public sector, among procurers of services in these industries and among suppliers of technology, materials and energy – who are interested in participating in local, regional or industry specific projects with the objective of introducing hydrogen as a fuel.

Through mapping and gathering these actors in a joint network and through establishing arenas for cooperation, the project will facilitate the development of concrete, independent projects for fleet procurement and/or infrastructure development.

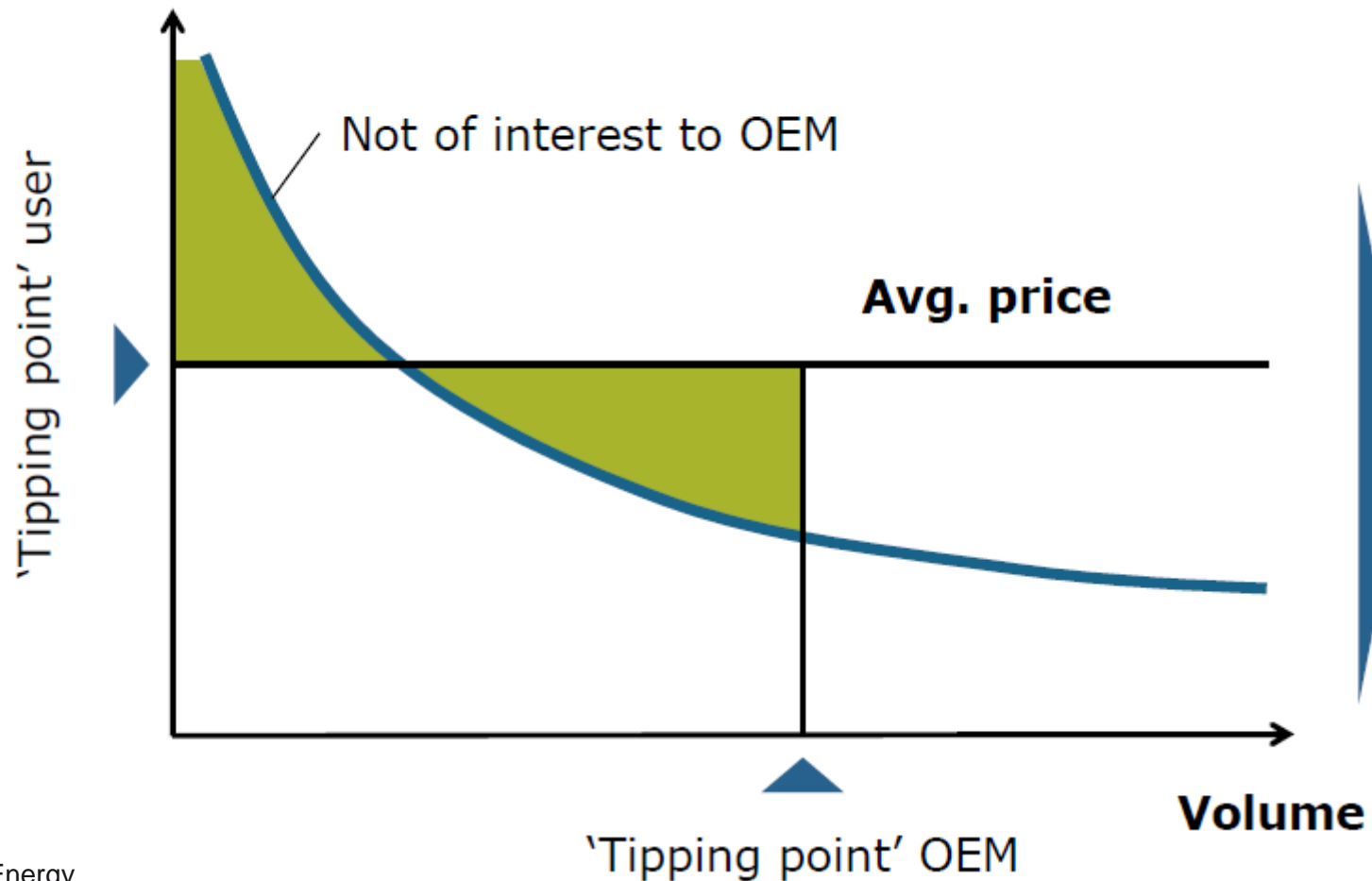
The company _____ takes interest in the project and requests an offer of participation in the project. Signing this document does not entail an obligation of investment.

Name: _____
Job title: _____



How Hydrogen?

Cost/price



- Optimal business model
- Cooperation
- Concept: trucks trigger HRS network scale-up

Source: H2 Energy

How Hydrogen?

Tabell 3: Hurtigbåtsamband med utløpsdato

Fylke	Rutenavn	Pakkenavn	Kontraktstløp
Rogaland	Stavanger-Ryfylke	Ryfylke	31.12.2021 + opsjon 3 år
Rogaland	Stavanger-Hjelmeland	Ryfylke	31.12.2021 + opsjon 3 år
Rogaland	Stavanger-Kvitsøy	Ryfylke	31.12.2021 + opsjon 3 år
Rogaland	Stavanger-Lysebotn	Ryfylke	31.12.2021 + opsjon 3 år
Rogaland	Stavanger-Fisterøyene	Ryfylke	31.12.2021 + opsjon 3 år
Rogaland	Stavanger-Hommersåk	Byøyene	31.12.2021
Rogaland	Røvær/Feøy	Røvær/Feøy og Utsira	31.12.2027
Rogaland	Utsira	Røvær/Feøy og Utsira	31.12.2024
Hordaland	Kleppstø-Strandkaien		31.12.2017
Hordaland	Knarvik-Frekhaug-Bergen		31.12.2018
Hordaland	Rosendal-Bergen		31.12.2023 + 2 + 2
Hordaland	Reksteren-Våge-Os		31.12.2023 + 2 + 2
Hordaland	Turistrute Hardanger		31.12.2019
Hordaland	Sunnhordland-Austevoll-Bergen		31.12.2023 + 2 + 2
Hordaland	Lokalbåt Austevoll		31.12.2023 + 2 + 2
Hordaland	Espevær-Eidesvik		31.12.2023 + 2 + 2
Hordaland	Hellesøy-Hernar		31.12.2023 + 2 + 2
Sogn og Fjordane	Florabassenget 1	Flora, Bremanger, Vågsøy	31.12.2021

Sogn og Fjordane	Måløy-Smørhamn-Florø	Flora, Bremanger, Vågsøy	31.12.2021
Sogn og Fjordane	Måløy-Silda	Flora, Bremanger, Vågsøy	31.12.2021
Sogn og Fjordane	Måløy-Hennøystranda	Flora, Bremanger, Vågsøy	31.12.2021
Sogn og Fjordane	Ambulansebåt	Flora, Bremanger, Vågsøy	31.12.2021
Sogn og Fjordane	Florabassenget 2	Flora, Bremanger, Vågsøy	31.12.2021
Sogn og Fjordane	Vik-Ortnevik	Høyanger, Vik, Lærdal	31.12.2021
Sogn og Fjordane	Ortnevik-Måren-Nordeide	Høyanger, Vik, Lærdal	31.12.2021
Sogn og Fjordane	Flåm-Balestrand	Høyanger, Vik, Lærdal	31.12.2021
Sogn og Fjordane	Gulen-Ytre Solund	Gulen, Solund, Askovoll	31.12.2021
Sogn og Fjordane	Harrdbakke-Nåra-Mjømna	Gulen, Solund, Askovoll	31.12.2021
Sogn og Fjordane	Kolgrov-Utvær	Gulen, Solund, Askovoll	31.12.2021
Sogn og Fjordane	Gåsvær-Midtre Solund-Hardbakke	Gulen, Solund, Askovoll	31.12.2021
Sogn og Fjordane	Nord-Solund	Gulen, Solund, Askovoll	31.12.2021
Sogn og Fjordane	Alden-Værlandet	Gulen, Solund, Askovoll	31.12.2021
Sogn og Fjordane	Nordfjord-Bergen-Nordfjord	Regionale hurtigbåtruter	31.12.2021
Sogn og Fjordane	Bergen-Nordfjord-Bergen	Regionale hurtigbåtruter	31.12.2021
Sogn og Fjordane	Sogn-Bergen-Sogn	Regionale hurtigbåtruter	31.12.2021
Sogn og Fjordane	Sommerrute Bergen-Flåm	Regionale hurtigbåtruter	31.12.2021
Møre og Romsdal	Kristiansund-Trondheim (eier)		31.12.2021 + 2 år
Møre og Romsdal	Hareid-Valderøya-Ålesund		31.12.2024 + 2 år
Møre og Romsdal	Langevåg-Ålesund		31.12.2024 + 2 år
Møre og Romsdal	Ålesund-Valderøya-Nordøyane		31.12.2024 + 2 år
Møre og Romsdal	Sundbåten Kristiansund		31.12.2024 + 2 år

Source: Greensight

Driving forces



Signed invitations



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