

TRELLEBORGS
ENERGI

Trelleborg – a hydrogen hub in southern Sweden?

A short summary of Trelleborg's hydrogen initiatives
spring, 2024



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Why hydrogen and why Trelleborg?

An important complement to electric vehicles

850 000 trucks/year passing Trelleborg's port, est. 1,5 million by 2030

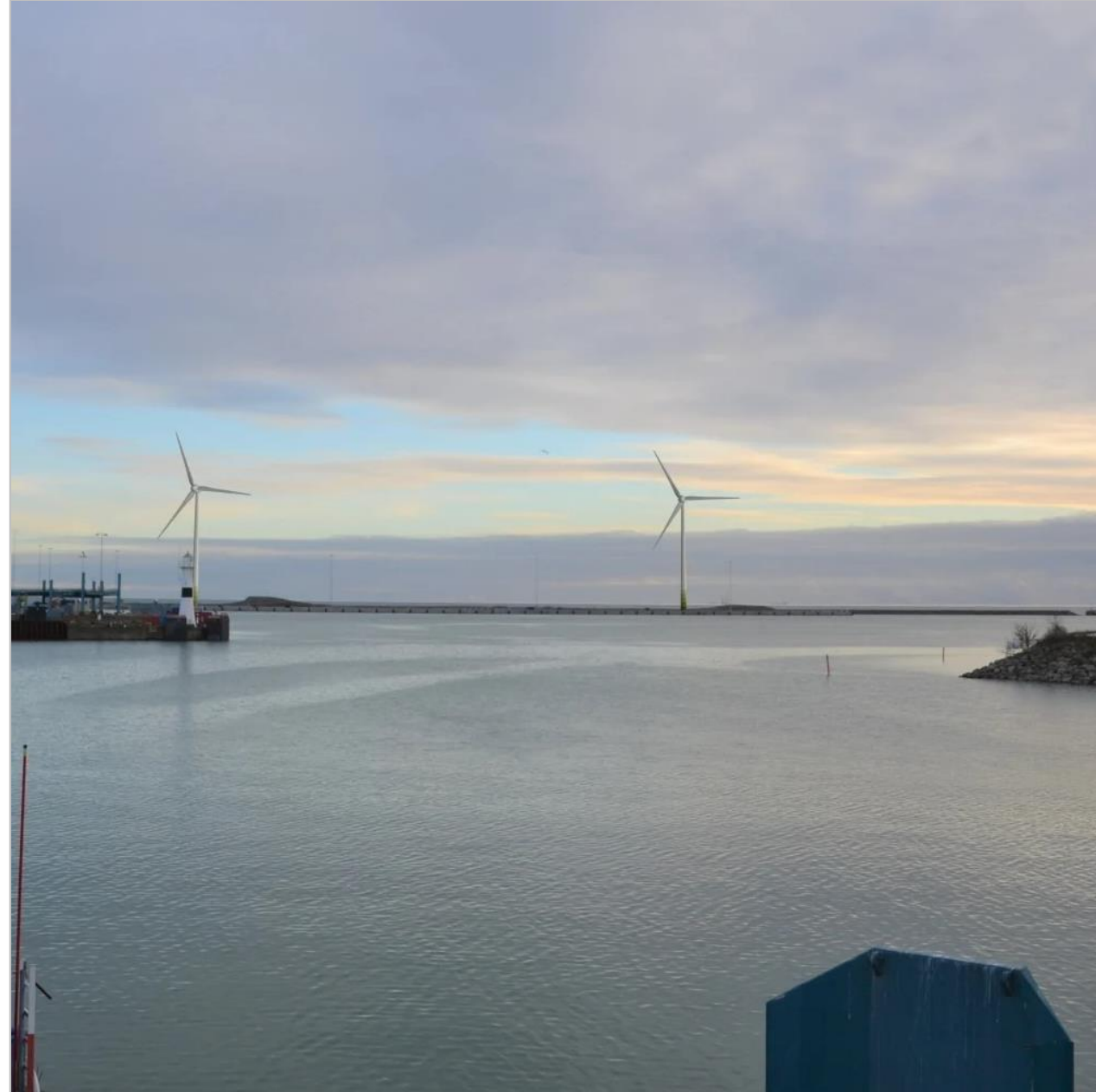
One of the solutions for large-scale storage and flexibility market locally

Balancing off-shore wind power in southern Östersjön as well as local solar farms (planned production)

Strengthens security of supply and local self-sufficiency

New hybrid concept in Trelleborg / Västra Sjöstaden

...and of course, with a hydrogen market comes additional employment and subsequent tax revenues, nationally as well as locally.



Hydrogen in Trelleborg: our way from vision to market



2019 – Trelleborg adopts new energy plan to “increase and support infrastructure for alternative sustainable fuels and increase the level of self-sufficiency re. energy”

2019 – Inspirational trip to Germany (hydrogen solutions)

2020 – Trelleborg joins Nordic Hydrogen Corridor (NHC), first municipality to sign off on refuelling stations for hydrogen

2021 – Trelleborg formulates a concrete cross-sector plan for introducing hydrogen in Trelleborg, spanning over transport sector, real estate/urban development, industries, education.

2022-23 – Trelleborg signs off important milestones with notable international partners: heavy duty vehicles w H2X, fuelling station w Everfuel and production w Lhyfe

2024 - 1 million SEK grant from Swedish Energy Agency for Västra Sjöstaden project. Also, start of renovation project at TEAB HQ.



On-going projects and status

Urban development

- Hybrid solution for Västra Sjöstaden - low temperature district heating + PVs + hydrogen + batteries – LOI, concept design 2024
- Renovation of TEAB HQ

Local production

- 10 MW (+5 MW) production facility, Lhyfe – in use 2027
- Feasibility study for large scale production (500+ MW) – 2022

Fossil free transport and infrastructure

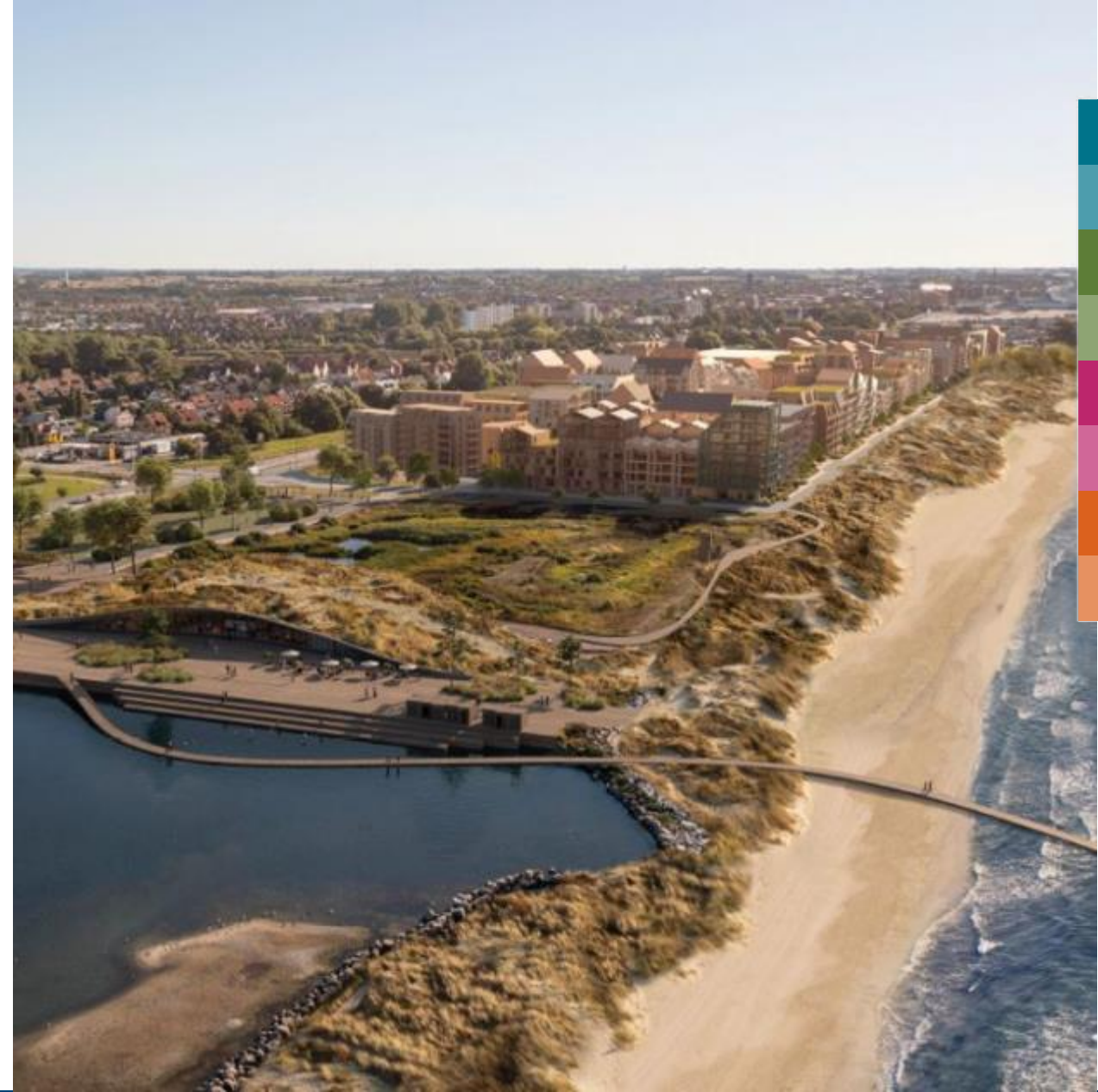
- Refueling station at Maglarp
- Exchange of vehicles

Education

- Hydrogen course at vocational university (Yrkeshögskolan Trelleborg) – ongoing

Grant applications – EU

- For establishing a small-scale hydrogen valley (500 ton H₂)



Thank you for listening!



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Fossil free transportation and infrastructure

Refueling station, Maglarp, Trelleborg

- Nordic Hydrogen Corridor, previously supported by EU, now a project for hydrogen infrastructure in the Nordic countries, Hydrogen Sweden
- A 1000 ton-station by Maglarp, outskirts of Trelleborg
- For LD/HD transport, dual pressure = high capacity and speed
- Currently seeking new partnership, major interest



Local production 10 MW

- Localisation: Business Center Trelleborg, logistics center for port, long haul transport, and rail road transport
- Effect of electrolyser of 5 (+ 5) MW.
- Will serve refueling station in Maglarp w locally produced green H₂ – from two wind turbines on shore in the port of Trelleborg, approx. 15 GWh
- Residual heat will be re-used in our district heating system, to result in up to 95 % efficiency
- Status: permit for land localisation, in-depth risk assessment in process

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UN NOUVEAU PROJET



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@Lhyfe_hydrogen an
a feasibility study to
hydrogen production



105

NUMBER OF POSTS



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POTENTIAL REACH



241

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Energibolaget Trelleborgs Energi gör gemensam sak med vätgasföretaget Lhyfe i en förstudie inriktad på att bygga upp en förnybar vätgasproduktion i södra Sverige. Resultatet ska presenteras under sommaren 2022 och en anläggning kan vara på plats 2024.



Potential in large scale production, study from 2022

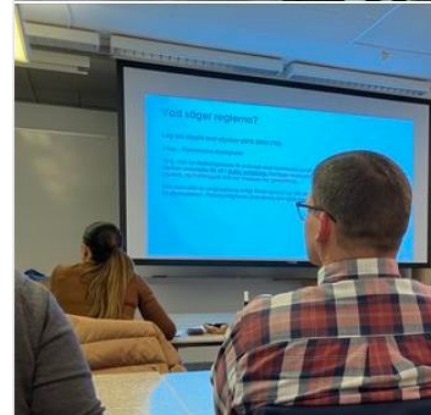
- Based on off shore wind in southern Baltic sea (31 projects of a total of 62 GW)
 - Cost benefit in off shore power producer & H2 producer
- For best outcome – 500+ MW (500-1000 MW)
- Cluster & export: industries around Hbg + pipeline to Denmark-Germany (European Hydrogen Backbone)
- Production of ammonium locally for fertilizer production in Norway/Netherlands

Companies participating in the study : ABB, Fortum, Trelleborgs Hamn, Uniper, Adven, Eolus Vind, OX2, Kustvind, Höganäs, Kemira, Nordion, Yara



Vocational university course

- Vocational university – programme for Hydrogen started in Aug 2022
- Third semester from August, 40 students have finished so far
- Goal is to add to general knowledge of hydrogen and its uses and potential. No certification.
- Participants from industry, energy, rescue services, municipal organisation
- Course includes: regulatory and permit process, risk assessments and safety aspects, technique and facility and hydron as an energy source



Vätgas; uppbyggnad, tillämpning och säkerhet. 65 YH-poäng

Vätgasutbildning – nästa kursstart 28 augusti 2023.

Kurspaketet om vätgas riktar sig till dig som har både erfarenhet, och kompetens från en verksamhet som berörs av pågående energiomställning. Kurserna ger dig specialiserad kunskap inom vätgas för att du ska kunna hantera nya utmaningar inom ditt yrkesområde.



Utbildningen om vätgas riktar sig till dig som har erfarenhet från en verksamhet som berörs av pågående energiomställning. Fotograf: Niclas Ingvarsson





Urban development

New hybrid solutions

- LOI with developers of Västra Sjöstaden for a unique, hybrid solution with low temperature district heating and hydrogen storage with PVs
- Awarded project grant by Swedish Energy Agency for concept development, ready 2024



A developing hydrogen market



Fiba Technologies chose Trelleborg because of its hydrogen initiatives, geographical localisation, and access to port and railways:

"The fact that Trelleborg is well under way to become a hydrogen hub, with both production and education, was a huge bonus."

John Finn, Deputy CEO, Fiba Technologies



"It was a natural and strategic decision to have a presence in Trelleborg. The town has become one of the most interesting places in Sweden, driving the fossil-free transformation of the transport sector with hydrogen at its core. Logistically and geographically Trelleborg has unique traits – in Sweden but with close connection to other places in Northern Europe. This is an edge in sales, services and in finding competences."

Christer Wikner, President & CEO Metacon AB



Application for EU-grants

Trelleborg and Trelleborgs Energi is in the process of applying for grants to create a small-scale hydrogen valley, a hub for a production of at least 500 ton green hydrogen/year, supplying more than one sector with hydrogen.

Potential parts included in the application:

- Large-scale hydrogen production, 1 GW
- Renovation of TEAB's HQ, 110 kW
- Västra Sjöstaden urban development, 500 kW
- Lhyfe's production of 10-15 MW; and
- Refueling station at Maglarp



Our core business – a sustainable development

Our mission: sustainable energy solutions for coming generations.

- We ensure stable energy distribution, heat as well as electricity.
- We provide Trelleborg with EV charging, solar energy solutions and energy efficiency projects.
- We are also partners developing hydrogen production & storage solutions in Trelleborg.



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