

1. Project description

HySynergy Phase 2, +300MW Facility in central Denmark

Phase 1 of the flagship hydrogen project “HySynergy” in Fredericia, central Denmark, passed FID in late 2020 and is well underway towards commissioning of the initial 20MW electrolyser in mid-2022. The project, led by facility owner/operator Everfuel in close collaboration with the Fredericia refinery and a number of strong regional/national project partners, features an ambitious large-scale production and storage of green hydrogen, flexibly designed to absorb the increasing capacity fluctuations in renewable energy production - resultantly paving the way for a competitive supply of green hydrogen as a fuel for as zero emission mobility, as well as supporting the reduction of carbon footprint within the existing Fredericia refinery processes.

With Phase 1 supported by the Danish Energy Agency and EU programs, it is the ambition to rapidly expand the scope of the facility over the coming years, enabling a multitude of Power-to-X synergies as well as contributing significantly towards the European CO2 reduction targets as well as the Danish government goal of 70% CO2 reduction before 2030.

Phase 2 of the HySynergy project aims at commissioning minimum 300MW capacity before 2025, leveraging on expertise and modular thinking of the ongoing phase 1. Adding to an envisioned integration with the regions’ large district heating system and a continued close collaboration with regional, national and international project partners, the HySynergy Phase 2 will seek to unlock the full potential of hydrogen and Power-to-X, upstream and downstream.

Please select which part of the value chain for hydrogen your project focuses on (select one or more, where applicable):

Production	Transmission	Industrial application	Mobility	Energy	Housing application	Other
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

2. Partnerships and spillover effects

In connection to the ambition of unlocking the full potential of hydrogen and Power-to-X, Everfuel and the site partners’ approach in Phase 2 is to generate as many synergies and spillover-effects as technically and economically feasible. This in order to further advance the scale-up of the combined facility/activities, increase the facility’s renewable energy storage capacity and in general reduce the facility’s resultant costs of hydrogen – thus achieving even further commercially viable cost-levels of 1) hydrogen directly distributed for zero emission mobility and 2) hydrogen for green hydrogen-based products (hydrotreating and biorefining included). In terms of jobs etc., this collaborative approach to modular hydrogen/PtX facilities, including linked activities within local EPC, O&M, fuel supply, involves significant job creation potential.

Everfuels’ project partners in HySynergy phase 1 consist of the Fredericia refinery (currently Shell), AEA (EPC), Trefor (regional DSO), Energinet (national TSO), TVIS (district heating system TSO) and EWII (power grid analysis). Additional Phase 1 info, see Everfuel webpage.

For phase 2, Everfuel is **pleased to invite interested stakeholders and off-takers of green hydrogen or products based on green hydrogen for discussion on possible collaboration, timelines, supply potential and/or cooperation across complementary project initiatives**