

1. Project description

GreenLab Skive is a green and circular energy park, a technology enabler and Danish research facility. It is a platform and hosting facility for PtX, specially designed to accelerate PtX scale-up. Supported by the Danish Energy Authority and along with a consortium of technology partners, GreenLab is currently preparing to host and construct a 12MW electrolysis plant which, via upgrade of biogenic CO2 from an onsite biogas plant, will produce 10 million liters of green methanol per year. The project is expected to commission operations in 2021 and be in full operation by Q4 2022. The site in Skive is prepared to host 250MW of electrolysis in the short term and is open to new consortia. It is therefore an excellent opportunity for first roll-out of European projects (for acceleration) and data generation as a steppingstone for larger projects (offering long term benefits for scaling up the industry). The platform offers the first of its kind PtX Facility as a Service (FaaS) concept that takes care of all the infrastructure and permitting, except for the electrolysis and industrial synthesis plants themselves. The modular “plug and play” platform offers an ideal interplay between industry and PtX, with an established local hydrogen offtake. The site has a direct 150kV TSO grid connection plus 80MW hybrid renewable energy generated onsite (54MW wind and 26MW solar). A SymbiosisNet™ optimizes and exchanges energy and resources in all forms between participants in the park. Thus, all hydrogen produced will be 100% green either supplied by onsite renewables or certified green electricity from the grid, and excess products will be reapplied – as a complete energy system. With its head start and timely preparatory work for hosting PtX, GreenLab offers a range of benefits to the PtX participants in terms of reduced CAPEX/OPEX and a significantly shorter time-to-market.

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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

2. Partnerships and spillover effects

As such, GreenLab Skive is not the hydrogen project owner, but the aggregator bringing consortia together and ensuring the perfect hosting environment and access to a broad range of investment, technology and offtake partners targeting both green hydrogen and a broad PtX portfolio. More partners are welcome. The GreenLab Skive site could be relevant for new REDII compliant EU flagship hydrogen projects in the very short term (capacity for a total of 75MW in 2022 towards 250MW in 2026), and the GreenLab concept and platform, with its accumulated learnings, could be relevant for replication in connection with EU hydrogen projects as they roll out throughout Europe and scale up. In order to enable large scale hydrogen production at competitive price levels, the “Levelized Cost Of Hydrogen” (LCOH) must be reduced. Optimization of the price of electricity by delivering system services to the grid, and storing electricity during peak periods, and the monetization of excess heat and means of large-scale storage and district heating connection can contribute to this reduction. Interplay with the grid and infrastructure, and sector integration, is key to meeting the ambitious EU targets, and we are keen to explore opportunities with European counterparts throughout the value chain.