

Historic test zone designation paves the way for the use of 100% green power

In a historic decision, the Danish government has designated “GreenLab” as an official regulatory energy test zone. The test zone permit gives GreenLab dispensation from electricity regulations and brings Denmark one step closer to solving one of the biggest challenges in the green energy transition: The integration of unprecedented amounts of renewable energy into the energy system. GreenLab’s test zone permit is one of a kind in Europe, and the insights will be valuable for all of Europe’s green transition – including clean energy storage, green fuels, agriculture and industry

On 5 May 2021, the Danish Energy Agency has granted GreenLab status as an official regulatory test zone. In a regulatory test zone, the authorities allow activities to operate outside the existing electricity regulations. The test zone will enable Greenlab and the green companies that share each other’s surplus energy in GreenLab’s park through a SymbiosisNet™ to explore new energy solutions. Going forward, GreenLab will be able to test new innovative business models and new technologies that have so far encountered barriers under the current electricity regulations. The idea is that new industrial parks can set up joint energy production and consumption without negatively affecting the existing collective energy network.

One of a kind

“GreenLab’s test zone is one of a kind in the sense that GreenLab integrates energy production, industry, agriculture, pyrolysis and Power-to-X in one platform. Ideally, the test zone will be a proof of concept which can be replicated to even bigger scale. We believe similar industrial

energy parks should be established across not just Denmark, but across Europe. Looking ahead, the aim is for GreenLab to be a model for the future design of the energy system. The test zone permit is historic because Danish energy authorities have never before granted a similar permission, says Christopher Sorensen, CEO i GreenLab.

In essence, GreenLab's model connects renewable energy production directly with consumption. To exchange and balance the usage cycles, the future energy production should be installed close to consumption, just as new consumption should be established close to shared processes.

This is the recipe for relieving the electricity grid of the large amounts of electricity that the green transition inevitably requires.

A landmark for Europe's path to climate neutrality by 2050

One of the biggest challenges in the green transition is the congestion of our energy infrastructure. This makes testing of operational models in an experimental zone extremely important. Currently, the electricity grid does not have the capacity to accommodate all the green power we need to electrify our society. As part of the European Green Deal, Europe must be climate-neutral by 2050, and this will require massive expansion of renewable energy across Europe. We need a lot of green electricity to convert society to green consumption: cars, buses and trains need to be electrified; both industry and agriculture must be supplied by green, alternative energy sources; and our homes must transition to a carbon neutral sources for heating and cooling.

The learnings from the new test zone will also play an important role in Europe's expansion of green hydrogen. GreenLab can balance the grid in relatively large volumes applying its SymbiosisNet™ distribution system, either to direct industrial consumption, conversion into green hydrogen and power-to-x products or other means of storage.

Green Hydrogen Systems is a GreenLab partner and excited about the new opportunities.

“At Green Hydrogen Systems, we design and manufacture modular electrolysers for the production of green hydrogen, solely based on renewable energy. Its high energy density and efficient storage possibilities makes green hydrogen fundamental in decarbonising hard to electrify sectors like industry, heavy transportation and buildings and reaching net-zero emission society in 2050.

However, to fully realise its potential and achieve the necessary scale, we must lower the levelised cost of hydrogen towards cost parity with fossil fuels. The test zone at GreenLab as well as the access to large and stable amounts of traceable renewable energy at a competitive price will be a cornerstone of this endeavour,” says Sebastian Koks Andreassen, CEO, Green Hydrogen Systems.

FOR MORE FACTS ABOUT REGULATORY TEST ZONES (IN DANISH):

<https://ens.dk/ansvarsomraader/forskning-udvikling/regulatoriske-testzoner>