

Green Hydrogen Systems has been granted EUR 9 million to develop a 6MW test module for a 100MW solution worth more than EUR 48 million in contract value subject to later qualification.

Green Hydrogen Systems, a leading provider of efficient pressurised alkaline electrolyzers used in onsite hydrogen production based on renewable electricity, has as part of a consortium signed a grant agreement with European Climate, Infrastructure and Environment Executive Agency (CINEA) in connection with the EU Green Deal 2.2 funding call with a total consortium grant of EUR 30 million.

The goal of the project is to demonstrate a 100 MW of green electrolysis production located in GreenLab, Denmark which can be replicable in the rest of the world. Green Hydrogen Systems is responsible for delivering the first 6MW test module which aims at confirming the solution for the future 100 MW project. Green Hydrogen Systems has been granted EUR 9 million to develop the test module which is a subject to later qualification for a 100MW solution worth more than EUR 48 million in contract value.

The project will be a major opportunity to demonstrate Green Hydrogen System's new electrolysis system called HyProvide X-Series. The X-Series is based on the existing well-proven technology, optimised for use in large-scale applications. The solution is based on pressurised alkaline electrolysis, the most cost-efficient type of electrolysis, and a technology that efficiently works with the variable load from renewable electricity sources. This demonstration project will be essential in achieving the necessary scale for technological advancement and will contribute to lowering the levelised cost of hydrogen towards cost parity with fossil fuels.

As a first step, the 6 MW X-Series electrolyser module will be demonstrated by the end of 2022. Depending on certain performance criteria, the 6 MW module is planned to be expanded to a 100 MW electrolysis plant end of 2024. Throughout the GreenHyScale project a 7.5 MW high-pressure electrolyser for offshore application will be developed with planned operation end of 2025.

"We are excited and honored to be part of project that not only affects the Danish energy transition but can accelerate Europe's path to carbon neutrality by 2050. We strongly believe that the results of this project will have an immense impact on achieving the necessary scale for technological advancement and will contribute to lowering the leveled cost of hydrogen towards cost parity with fossil fuels", says Sebastian Koks Andreassen, CEO, Green Hydrogen Systems.

Anders Bøje Larsen is the CTO at GreenLab, and he explains why large-scale production is so important when it comes to green hydrogen. *"GreenHyScale is a very exciting project that allows us to work with large-scale production of green hydrogen – large-scale production is what will reduce production and distribution costs in the end. Our focus is to create a replicable solution for stakeholders in both Denmark and the rest of Europe – replicability is key to the dissemination of green hydrogen. That makes GreenHyScale an important project with the potential to contribute greatly to the positive development of a hydrogen infrastructure in and outside of the EU".*

The French company Lhyfe will supply high level control system for the 100MW plant and are responsible for the integration to GreenLab's SymbiosisNet – an intelligent network of energy and data that enables companies in GreenLab's green industrial park to share their excess energy with each other.

Once the prototype is done and meets the certain go/no go milestones, Everfuel will oversee the task of scaling the project commercially, which will result in the completion of the 100MW plant based on Green Hydrogen

Systems' electrolysis. A second offshore high-pressure 7.5 MW test module will be developed in collaboration between Green Hydrogen Systems, Siemens-Gamesa Renewable Energy and Equinor and tested at GreenLab Skive as a precursor for offshore hydrogen generation in connection with offshore wind turbines. Energy Cluster Denmark is leading the project's advisory board and the external communication, while Equinor is leading the project management.

"We are pleased to be a part of the exciting and ambitious GreenHyScale project. We see it as an important step in making green hydrogen commercially available, which is needed to assist the European energy transition. We are proud to work with strong partners who are all dedicated to developing the infrastructure for green hydrogen in Europe", says Jacob Krogsgaard, CEO, Everfuel.

"The GreenHyscale project's developments will initiate the long term operation of beyond 100MW renewable hydrogen production plants across Europe. The official start of the project shows both European hydrogen technologies development abilities and large scale industrial renewable hydrogen production being deployed by European companies," says Matthieu Guesné, CEO at Lhyfe.

"It is good news for the green transition in Europe that the project has begun. If we are to meet the ambitious targets of CO2-reductions and green goals of Europe, we need projects like GreenHyScale – and we need to join forces across Europe. The partnership is a good example of what we can achieve when key companies from the European energy sector join forces in upscaling green electrolysis technologies," says Glenda Napier, CEO, Energy Cluster Denmark.

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Green Hydrogen Systems in brief

Green Hydrogen Systems is a clean technology company and a leading provider of standardised and modular electrolysers for the production of green hydrogen solely based on renewable energy. With its wide range of possible applications, green hydrogen plays a key role in the ongoing fundamental shift in our energy systems towards a net-zero emission society in 2050. As a result, the demand for green hydrogen is surging, requiring a significant scale-up of electrolysis capacity. Founded in 2007 and building on more than 10 years of technology development, Green Hydrogen Systems today have a commercially proven and cost-competitive electrolysis technology endorsed by leading green energy companies.