COP 27: Haffner Energy contributed to the Special Report on Hydrogen

Biomass Thermolysis: An Alternative for the Future to reach the ambitious objectives of Renewable Hydrogen Production in Europe

---

Vitry-le-François, France, November 28, 2022,

On the occasion of COP 27, Hydrogen Europe, the European association representing companies and national associations of the hydrogen industry, presented its Special Report on Hydrogen. The report analyzes the development of the hydrogen economy, its industrial and political challenges, and its market perspectives. It also highlights the industry's technological advances with case studies that demonstrate how hydrogen is a reality and how its numerous applications are paving the way to a climate-neutral society, with a positive impact on the environment and on our daily lives.

In the midst of global energy crisis, Frans Timmermans, Vice-President of the European Commission, states as a foreword to this report that *"hydrogen is a strategic catalyst for the energy transition and an opportunity for a new industrial revolution that will have positive impacts in terms of economic growth, employment and energy security"*. With its REPowerEU plan, the European Commission has confirmed its ambition to deploy renewable hydrogen more rapidly, setting a target of 20 million tons of renewable hydrogen produced by 2030, including the production of 10 million tons in Europe. This is a significant target, which requires a technology-neutral approach to ensure both energy independence and carbon neutrality for Europe in 2050.

In this respect, the technology developed by Haffner Energy, highlighted in the report, can be a major contribution to the European objectives of renewable hydrogen production. With this ambition, Haffner Energy, member of Hydrogen Europe, presents in this report the benefits of its technology based on biomass thermolysis.

Haffner Energy's HYNOCA® technology: an agile and competitive industrial solution

Haffner Energy has developed and industrialized an innovative proprietary biomass thermolysis process called HYNOCA® (HYdrogen No Carbon) that enables industry and mobility players to produce green carbon negative hydrogen or synthesis gas and biochar.

In the current context of soaring energy prices, HYNOCA® technology distinguishes from other hydrogen production processes thanks to its many advantages. First, with its cost that has remained almost unchanged despite surge in energy prices of fossil fuels and electricity. Biomass thermolysis is a process that consumes very little electricity and relies on a primary energy source for which the costs have barely changed.

Moreover, biomass, a resource that can be found everywhere and available locally, can be used to produce hydrogen at very competitive costs, especially compared to fossil fuels. This process makes it possible to use local biomass, essentially woody agricultural residues, which is often abundant and unused. Moreover, this allows us to produce green hydrogen on demand without intermittency (8,000

hours/year) and to provide a complementary solution for decarbonization to our customers thanks to the biochar co-production.

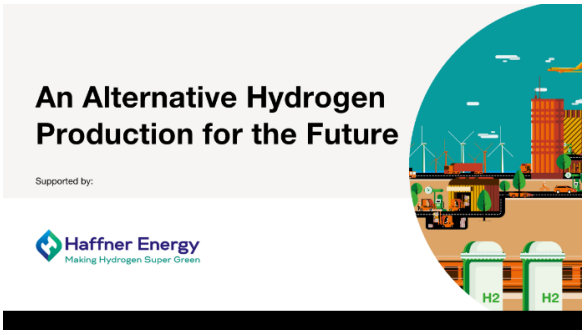
Biochar, containing approximately 85% carbon taken from the atmosphere, is an additional major asset and the basis of Haffner Energy's negative carbon footprint technology. For every kg of hydrogen produced with a HYNOCA® module, 5.5 kg of biochar is co-produced, allowing the sequestration of 12 kg of CO_2 net in a full life cycle analysis. This carbon resulting from the thermolysis of biomass residues serves as a stable and perennial carbon sink that can be used in soils (as fertilizer or amendment) or incorporated in materials (such as cement).
In the context of fighting climate change, biochar is an extremely effective method of CO_2 capture assessed by the Intergovernmental Panel on Climate Change (IPCC) and the European Union.

Philippe Haffner, Chairman and CEO of Haffner Energy, said*: "Renewable hydrogen is the flagship of the Energy Transition, and we will need all means of renewable hydrogen production to meet Europe's ambitious targets. Our HYNOCA® solution is available for immediate deployment, without the need for infrastructure. We support our customers across the entire value chain - including biomass procurement, maintenance and operational supervision. Haffner Energy is committed to becoming one of the major players in decarbonization by providing massive solutions to produce competitive and decarbonized hydrogen and renewable gases".*

***

To read the full case study with the interview of Philippe Haffner, Chairman and CEO of Haffner Energy, click here.

To download the full *Hydrogen Report 2022*, click here.



About Haffner Energy

A listed and family company co-founded and co-managed by Marc and Philippe Haffner and a player in the energy transition for 30 years, Haffner Energy designs and provides technologies and services enabling its customers to produce green hydrogen, renewable gas replacing natural gas combined with carbon capture through the co-production of biochar through its HYNOCA® and SYNOCA® processes, by thermolysis of biomass. Those processes allow the production of hydrogen or renewable gas at highly competitive cost, is carbon negative of 12 kg (net) of CO_2 per kg of hydrogen produced, while depending very little on the electricity grid and the cost of electricity. This enables Haffner Energy to make a very rapid and agile contribution to the strategic challenges of Europe's energy independence combined with the acceleration of its decarbonization.

Contacts

Investor Relations, Haffner Energy
Adeline Mickeler
adeline.mickeler@haffner-energy.com

Media Relations, NewCap
Nicolas Merigeau
haffner@newcap.eu

Tel : 01 44 71 94 98