

Helbio Hydrogen & Energy Systems, demonstrates the Helbio Hydrogen Generator 50m3/hour

Helbio S.A. the Greek Hydrogen generator manufacturer headquartered in Patras, GR, unveiled the Helbio Hydrogen Generator of a Hydrogen production capacity of 50m3/h, which is to be installed in Sweden September 2021, to feed hydrogen to a Hydrogen Car Refueling Station.

For the past 20 years & since 2001, Helbio has been delivering hydrogen systems globally, to Japan, Brazil, S. Korea and all-around Europe for industrial and Hydrogen refueling station use.

On June 14th and June 30th, Mr. Georgios Kasapidis, Regional Governor of Western Macedonia, along with the CEO of the Public Enterprise of Gas Distribution Networks (DEDA), Marios Tsakas and Theodoros Terzopoulos, Coordinating Director of Strategy & Distinguished Corporate Affairs, Constantinos Papaloukas, Coordinator of the Greek National Hydrogen Committee, Mr. Dimitris Coustas, Product Manager at Danaos Management Consultants and Mr. Iosif Lefakis and Mr. George Papaioannides of Saronic Ferries, Dr. Kiartzis the New Technologies and Alternative Energy Sources Manager of Hellenic Petroleum S.A., Dr. Diomidis Stamoulis Senior Manager of Strategic Planning of Industrial Activities and Participations at Hellenic Petroleum S.A, Dr. Evangelos Tentis Dipl. Mechanical Engineer Department of Natural Gas Networks Regulatory Authority for Energy (RAE) and Mr. Kontomaris Head Of Network Design & Studies Department of Gas Distribution Company (EDA) visited Helbio's facility in Carell S.A. premises, in order to observe the demonstration of Helbio's Hydrogen Generator, which has the ability to run on various gases, including natural gas, LPG and biogas, producing Hydrogen for the end user.

The event was organized by business owner Melissa Verykios Deputy CEO of Helbio, and Member of the Board & Governance Board of Hydrogen Europe, who gave the guests were a unique tour and a detailed presentation of the Hydrogen Generator.

Thomas Chalkidis, COO of Helbio, who has been the Head of Technology of Helbio since its birth, run the demonstration of the system, and revealed the functionality of the numerous sub-systems and complex components that are integrated into this highly efficient patent, which Mr. Chalkidis has led to commercialize.

The timing of this demonstration is crucial, as it coincides with the national proposal "White Dragon" which is in the call for expressions of interest for Important Projects of Common European Hydrogen Interest (IPCEI). The core of the project is based on the gradual replacement of the lignite production units of Western Macedonia and the transition to clean energy systems, with the ultimate goal of decarbonizing the energy mixture of our country.

The demonstration started with Mr. Jorgo Hatzimarkakis, General Secretary of Hydrogen Europe, welcoming the project and emphasizing that leading Greek companies such as Helbio can provide the necessary technology required by the Greek "White Dragon" project. According to Mr. Hatzimarkakis *"Helbio is setting an excellent example for shaping a completely new sector in Greece. With its competence in hydrogen technologies all over the years, the company has become an important catalyst of the Greek hydrogen ecosystem. We welcome very much that Melissa Verykios can contribute to this process as a newly elected board member of Hydrogen Europe."*

Helbio hydrogen generators offer high energy efficiency and reliability, and therefore can help the country achieve cleaner energy production. Mr. Georgios Kasapidis, Regional Governor of Western Macedonia, stated: *"I am very excited to see the technological developments of Helbio. Green energy production is our*

vision for the “White Dragon” project and Helbio is the only Greek company that has paved the way to support our bold vision and has demonstrated the ability to meet our expectations. Carell, with its know-how in the fields of engineering and robotic manufacturing, played a catalytic role in the implementation of Helbio's project. We hope that the majority of the infrastructure for the “White Dragon” will remain in Greek companies propelling forward the Greek industrial sector creating new jobs both for Western Macedonia and Greece in total”.

Theodoros Terzopoulos, Coordinating Director of Strategy & Distinguished Corporate Affairs of DEDA, stated in this regard: *“We are very pleased to follow the progress of Helbio. This project paves the way for synergies and reshapes many industries that require alternative and personalized hydrogen production methods. The construction and operation of the Hydrogen Generator serves, inter alia, the scope of the existing contract between our companies, because it is part of the technical support to DEDA on the technologies for the production and injection of H2 in urban distribution networks.”*

It could also be considered as a part of the under-consideration, DEDA's pilot project for the establishment of the 1st "Hydrogen Village" in Greece, where H2 will be produced and distributed, to supply domestic uses.”

What is more, the technology used can be also applied in marine applications for on-board hydrogen production and ammonia utilization helping the maritime industry to reach its decarbonization goals.

Mr. Dimitris Coustas, Product Manager at Danaos Management Consultants, openly stated his intention to support this technology through Danaos, helping the industry to move to a greener version.

Finally, Mr. Iosif Lefakis and Mr. George Papaioannides of Saronic Ferries were also debriefed not only about the specifics of the operation of the hydrogen generator but also about the unique benefits of ammonia and hydrogen utilization on-board ocean of its immediate application in the shipping industry. The vision is to utilize innovative, green propul-going vessels. More specifically Mr. Papaioannides stated: *“Our vision is the complete fleet replacement of Saronic Ferries with carbon free vessels in the next 15 years.”* Mr. Lefakis stated: *“We are very pleased to see the maturity of hydrogen technology and the possibility is on technologies on short distance ferries which will benefit the environment as well as the habitants on the islands and the port of Piraeus. Carell, one of the oldest ship repair companies in Greece will definitely help bridging the gap between traditional marine engineering and marine hydrogen systems, having a leading position in the process of shipbuilding and redesign”.*

Most of the construction process was undertaken by Carell S.A. on behalf of Helbio, and with the completion of this unit, the generator will be sent to the Hynion hydrogen refueling station in Sweden to power hydrogen cars.



From Left to right: Thomas Chalkides- Helbio, Constantinos Papaloukas- Hydrogen Committee, Theodore Terzopoulos- DEDA, George Kasapides- Minister of Western Macedonia, Mr. Tsakas- DEDA CEO, Mr. Papaioanides & Mr. Lefakis- Saronic Ferries, Melissa Verykios- Helbio Deputy CEO.



Mr. Chatzimarkakis



Melissa Verykios, Mr. Kasapides, Mr. Papaloukas.



Mr. Kasapides, Mr. Tsakas, Mr. Terzopoulos, Mr. Chalkidis .



Mrs. Verykios, Mr. Papaioannides.



Mr. Coustas, Mr. Papaloukas, Mr. Terzopoulos, Mr. Kasapides



Mr. Tsakas, Mr. Terzopoulos, Mrs. Verykios, Mr. Coustas, Mr. Carellis



The PSA: Purification of Hydrogen unit of the Helbio Hydrogen Generator.



The construction of the Hydrogen Generator at the premises of Carell S.A. in Perama, Greece.



Mrs. Melissa Verykios, Mr. Spyros Kiartzis