# H2GENIO - Green hydrogen for sustainable mobility, the technology of HYSYTECH

Green hydrogen as a contribution to sustainable mobility, capable of reducing environmental, social and economic impacts, air pollution intended above all as an improvement in air quality in cities, greenhouse gas emissions: this is the goal of the technological development of HYSYTECH in this field, innovation at the service of green chemistry.

**Green hydrogen - Hydrogen from biogas**
H2GENIO is the HYSYTECH technology, already consolidated in the industrial field, for low pressure "Steam Reforming", which is used for the production of high purity hydrogen (use of Natural Gas, very low electricity requirement, minimum installation costs and exercise).
HYSYTECH has developed an application of H2GENIO technology which involves the use of biogas as a source for the production of green hydrogen.
The company has built a plant capable of supplying 50 Nm3 / h of renewable green hydrogen (H2) from biogas (landfill gas, anaerobic digestion from organic waste, anaerobic digestion of sludge from waste water treatment).

**Green hydrogen - The technology of HYSYTECH**
The new plant for the production of green hydrogen from biogas has taken advantage of the solutions consolidated by HYSYTECH in the sector, such as the implementation of a reactor capable of simultaneously carrying out the functions of methane conversion, steam production and heat generation necessary, together with the functionality of WGS to increase the yield of hydrogen produced. This technology was patented by HYSYTECH in 2009 and, to date, already applied in over 200 installations.
In addition to these solutions, there are recently developed innovations, which allow energy efficiency in the conversion of biogas into H2. In comparison with the electrolysis process, our technology allows for the production of hydrogen with 20 times less electricity consumption.

**Green hydrogen for sustainable mobility - The first plant in 2020**
The first plant for the production of green hydrogen from biogas produced by the anaerobic digestion of the organic fraction of waste from separate collection (MBW) was put into service by HYSYTECH in 2020, thus further enriching the Turin company's experience in the field of biofuels.

**Biofuels - HYSYTECH's commitment**
Not only green hydrogen: HYSYTECH has been at the forefront of biofuels for years.
On the subject of Biomethane, in 2014 HYSYTECH, together with Acea Pinerolese Industriale, built the first biogas upgrading plant in Italy obtained from the anaerobic digestion of MBW.
In 2016, together with EGEA, FCA and CNH, it inaugurated the first full tank of biomethane intended for the refueling of bio-CNG vehicles.
In 2020, thanks to the continuous collaboration with Acea Pinerolese Industriale, a new biomethane plant came into operation, which treats up to 1,500 Sm3 / h of biogas and feeds the biomethane into the natural gas distribution network for automotive use.
HYSYTECH is also investing in new applications related to Bio-LNG together with Stirling Cryogenics, a Dutch company that has been part of the same group since 2018. In this context, in September 2018 it inaugurated in Troia (FG), within the EU STORE & GO project, the first CO2 methanation plant in Italy for the production of Bio-LNG.

**Hysytech S.r.l.** is an engineering company founded in 2003, specialized in the design, development and industrial implementation of new turn-key process technologies and equipment. Our skills start from the know-how in chemical and process engineering, up to commissioning, monitoring and maintenance. We operate mainly in the field of generation, treatment and recovery of industrial gases, organic liquids and energy, according to the best engineering practices, also through the implementation of our technologies.

**Idrogeno verde - Link:**
VIDEO H2GENIO: https://www.youtube.com/watch?v=AN2Gz1x7DQc&t=8s
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