



Technology Collaboration Programme
by IEA

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Markets, Mergers & Acquisitions

BP Spain to purchase biomethane from Enagás subsidiary

Enagás and BP have signed an agreement to promote emission reduction projects in Spain. The agreement will see the firms promote the development of projects in three key areas: the promotion of liquefied natural gas (LNG) and compressed natural gas (CNG) infrastructures in sustainable transport; the production and incentive of the consumption of renewable gases. In addition to purchasing biomethane from Bioengas, BP will also collaborate with the company to create a national market for the sale and purchase of biomethane and identify new consumption opportunities. According to a statement by Enagás, BP's strategic objective is to supply biomethane from its LNG and CNG stations, as well as exploring the potential of supplying the BP refinery in Castellon through biogas, biomethane, or hydrogen plants derived from biogas projects, in line with its eco-fuels strategy.

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Normec acquires Belgian AD specialist OWS

OWS was one of the first independent companies ever building continuous solid waste digesters. They developed the process in the eighties of last century. The company, based in Gent, Belgium, designs and builds municipal solid waste treatment plants using anaerobic digestion (AD) to produce compost and biogas, and has subsidiaries in the US, Germany, and Japan. The firm's engineering and plant construction division is currently working on four new projects. In Belgium, two DRANCO plants for the conversion of household waste into biogas and compost are being built in Leuven and Dendermonde, and two plants are under construction in Asia (Chongqing in China and Yorii in Japan). Normec is active in the field of testing, inspecting, certification (TIC) and compliance mainly in the Netherlands, Belgium, and Germany.

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European Innovation Council invests 17,5 Million Euro in Power-to-Methan-Technologie

Power-to-gas technology provider Electrochaea is one of only five German start-ups to receive funding from the European Innovation Council (EIC) confirming that their market-ready innovations make an important contribution to the goals of the European Green Deal and the UN Agenda for Sustainable Development. Electrochaea specialises in biological methanation. In this process, microorganisms in bioreactors convert CO₂ and hydrogen into biomethane. This process uses electricity from renewable energy sources, which can thus be stored cost-effectively and in the long term as "green gas". For the scaling of this technology and for the realisation of the first standard 10-megawatt (MWe) plant, Electrochaea is now receiving EU grants of 2.5 million euros and an equity investment of 15 million euros. The EIC Accelerator programme is part of the EU research and innovation programme "Horizon2020". It is aimed at start-ups and SMEs, which can apply for grants or mixed funding of grants

and equity support.

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First microbial industrial power-to-gas plant

The two Viessmann subsidiaries microbEnergy and Schmack Biogas are partnering with Swiss energy supplier Limeco to build the world's largest power-to-gas plant, which uses the microbiological conversion of hydrogen to methane. The Swiss energy supplier Limeco is partnering with Viessmann subsidiaries microbEnergy and Schmack Biogas to build the world's largest power-to-gas plant, which uses the microbiological conversion of hydrogen to methane. The technology was developed and brought to production maturity by Viessmann subsidiary microbEnergy. The technology supplier for the electrolysis is Siemens. The companies involved jointly signed the contract for services in this forward-looking major project. Limeco is launching the project under the Swiss "Energierstrategie 2050" (Energy Strategy 2050), which seeks to phase out nuclear power, reduce greenhouse gases, and expand renewable energy such as solar or wind power. With its three business areas of waste disposal, wastewater disposal, and heat supply, Limeco is predestined for a power-to-gas energy system. The excess electricity generated during the waste recycling process is converted to hydrogen and mixed with sewage gas from the wastewater treatment plant – this produces storable renewable gas." The PEM (proton exchange membrane) electrolysis plant from Siemens has a total capacity of 2.5 MW and can thus generate up to 450 Nm³/h of hydrogen. This is then converted to biomethane together with the carbon dioxide from the sewage gas produced.

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Market state & trends in renewable gases

The "Market State and Trends Report", developed by Guidehouse, illustrates case studies of several European countries, identifying the progress needed both on the regulatory side and on the demand side to encourage greater penetration of hydrogen and biomethane.

With regard to biomethane, there has been a rapid growth in production and in anaerobic digestion and upgrading plants, also due to falling costs, with a consequent increase in grid injections over the last decade from about 5.5 TWh per year to the current 20 TWh. By 2030, the share of biomethane in European grids could reach 5-8%. Cross-border trade of biomethane certificates is still limited in the EU to less than 10% of production levels, but is gradually increasing. In terms of green hydrogen production, electrolysis capacity in Europe has been growing at a rate of 20% per year from 2016 to 2019. Proton Exchange Membrane (PEM) technology is closing the efficiency gap with alkaline electrolysis (ALK) and solid oxide electrolysis (SOEC) cells. Green hydrogen can also be produced by feeding a steam reforming unit or an autothermal reforming unit with biomethane obtained from biogas. By 2030, much of the expansion of that capacity will come from Belgium and Italy, which will develop nearly 11 GW more. Based on these developments, the report concludes that Europe's renewable gas sector can make a key contribution to achieving the 2030 decarbonization target and calls for binding targets to speed up its development.

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Renewable Natural Gas

Grupo Cocal, a Brazilian sugar mill operator that refines sugar and produces ethanol biofuel from sugarcane, will install a pressure swing adsorption biogas upgrading system to its sugar mill. This system will produce renewable natural gas (RNG) from the anaerobic digestion of by-products from the sugar refining and ethanol production process. The RNG will be used, in part, to displace diesel fuel in Cocal's commercial operations and vehicle fleet and provide a clean low-carbon supply of RNG for the local gas grid. This is expected to be the first commercial-scale pipeline injection RNG project in the Brazilian sugar cane industry.

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New UK-based trade body launched for renewable transport fuel

Twelve UK-based companies have united to launch the Renewable Transport Fuel Association (RTFA) – a new trade body which aims to achieve rapid action to decarbonise transport through use of bioethanol, biodiesel, biomethane and biopropane. The founder members include: Associated British Foods, ABSL, Alco, Argent Energy, Calor, CNG Fuels, Ensus UK, Gasrec, Greenergy, Nova Pangea, Olleco, and Velocys. Gaynor Hartnell, Chief Executive, said that the association aims to ‘grow the market for renewable and recycled carbon fuels, and progressively replace fossil fuels used in UK transport (road, rail, maritime and aviation)’.

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Air Liquide and Shell sign bio-NGV refuelling agreement

Air Liquide and Shell signed an agreement giving heavy-duty trucks with the Shell card access to Air Liquide’s network of multi-energy stations in France. Heavy-duty trucks will now be able to refuel with bio-CNG (biomethane) at Air Liquide’s network of stations on the French territory, especially those located along the French north-south motorway network – an important route for European road transport companies. These stations distribute a range of fuels, including bio-LBG, CNG and liquid nitrogen for refrigerated trucks. Air Liquide operates all along the biomethane value chain with a circular economy approach, according to the firm, from the production and purification of biogas from the plants it operates to its injection into natural gas grids and its use as a road transport fuel. The company now has more than 80 stations distributing bio-CNG in Europe, including 16 in France.

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Gasum acquires major biogas plant in Sweden

Gasum has acquired a biogas plant from Torran Gas Holding in Sweden. With the right feedstock, the Skövde Biogas plant could produce up to 40 GWh. The plant, along with Gasum’s biogas plants in Lidköping and Vadsbo (50% ownership) and a planned facility in Götene, will allow the company to boost its biogas production capacity. The acquisition will also enable Gasum to optimise raw material sourcing and distribution between its other plants. The addition of the Skövde plant will help to facilitate large-scale biogas production in the area and will also produce bio-fertilisers to be used on surrounding farms. According to Gasum, potential suppliers with considerable volumes of excess raw material need a stable partner that can receive and process a wide range and large quantities of waste-based feedstocks. Gasum can obtain these materials from locations that would otherwise be considered beyond the bounds of its network of local biogas facilities.

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Host building five new manure digesters in the Netherlands

Host has hailed its collaboration with Dutch dairy firm FrieslandCampina’s ‘Jumpstart’ cooperative a “great success”. Under the partnership, Host is building five of its Microferm manure digesters at dairy farms in the Netherlands, with two already complete. The five Microferms are being built at farms in Overijssel, Friesland, Leeuwarden, Limburg, and Brabant. The installations produce 40 Nm³ of biomethane per hour from 12,000 to 16,000 tons of manure per year. The Microferm system produces biomethane from manure using anaerobic digestion and biogas upgrading, helping dairy farmers earn extra income. Host works with the Jumpstart cooperative, an initiative by dairy firm Friesland Campina, as a qualified supplier of the Microferm mono-manure digester with a biomethane system. In total, the Netherlands will soon be home to 15 Microferm systems, of which two-thirds will produce approximately 3.2 million cubic metres of biomethane per year. The rest produce green electricity and heat with a CHP unit. According to Host, the strength of this mini biogas plant lies in its simplicity with proven technology, the low risk, and manageable investment. With one Microferm, approximately 240 households can heat and cook with

sustainable gas all year round.

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VERDEMETANO: Italy's first farmer cooperative to produce and distribute Biomethane

Twenty farms have signed in Bologna the Memorandum to found the society "Verdemetano", the first agricultural cooperative with the aim of aggregating and enhancing the production of biomethane obtained from agricultural by-products, livestock manure and sustainable crops, in line with the process of decarbonization of transport undertaken by Italy and the European Union.

The cooperative "Verdemetano", born from the experience gained by CGBI, a cooperative reality engaged in the production of biogas after the reconversion of the sugar beet sector has also defined the strategic assets: 130 million of investment, an annual production capacity of 100 million cubic meters of biomethane, able to fuel more than 2,000 bio-LNG trucks and reduce CO2 emissions up to 95%.

Aggregate to enhance, this is the mission of Verdemetano through strong partnerships in the market of advanced biofuels, with a communication campaign that aims to enhance a renewable product 100% made in Italy. Verdemetano is the first productive aggregation of agricultural biomethane, open to all future producers of biomethane who wish to be part of this ambitious agro-industrial project.

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Year-round storage of solar energy in form of naturally produced biogas

With the innovative project "Underground Sun Conversion - Flexible Storage" (USC-FlexStore) the Swiss gas distributor Energie 360° and the Austrian company RAG Austria AG aim to offer a seasonal conversion and storage solution for renewable energies on the market. This involves converting surplus renewable electricity in summer -e.g. from solar power - into hydrogen (H₂). The latter is stored together with carbon dioxide (CO₂) in natural underground storage facilities at depths of over 1000 meters. There, microorganisms combine hydrogen and carbon to form renewable methane gas (CH₄). In winter, the energy can be withdrawn from the storage facilities and used again. The two energy companies want to further develop this underground sun conversion technology (methanation of CO₂ and H₂) patented by RAG and design services based on it. Field trials are already underway for this at RAG's research site in Pilsbach in Austria. The electricity profile will only become sustainable if stored renewable summer energy compensates for the electricity deficits in winter - which will become even greater in the future due to increased use of heat pumps and the market penetration of electric mobility.

[More](#) (in German)

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