

## Newsletter IEA Bioenergy Task 37: 12/2018 Biomethane

### 11% more Swiss biogas injected in 2017

In 2017, 11 percent more Swiss biogas was fed into the grid compared to the previous year corresponding to 341 GWh. The Swiss gas industry will significantly boost the feed-in of renewable gases in the coming years. The goal is to increase their share in the heating market to 30% biomethane by 2030. A biogas fund is fed with CHF 3.4 million per year to support the construction of new upgrading plants. With its biogas fund, the gas industry is specifically promoting new plants because no public money nor FiT are available for biofuels. In order to further expand the production of renewable gases, additional financial efforts by the gas industry will be needed. In particular, the framework conditions must also be improved. The gas industry pays more than half a billion francs a year for the compensation of CO<sub>2</sub> emissions; part of it should be used to promote the production and feed-in of renewable gases.

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### New type of reactor for biological methanation

In a research project, the Brandenburg Technical University (BTU) Cottbus Senftenberg has further optimized its 2012 developed continuous trickle-bed reactor for the biological methanation and tested under realistic conditions. The procedure is potentially well suited for flexible storage of energy as a contribution to the energy revolution. The reactor is characterized by a particularly high methane concentration up to 98 percent in the product gas thanks to an elevated pressure of 5bar yet still presenting a low power and heat demand. BTU tested the process in a pilot plant for the coupling of organic, solar and wind energy in practice. No further improve of hydrogen conversion was achieved at higher pressures. The system was also operated successfully with raw biogas instead of CO<sub>2</sub> from biogas upgrading.

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### New UK biofuel targets came into force

In the U.K., the new Renewable Transport Fuel Obligation requires fuel companies to nearly triple the amount of renewable fuel they supply by 2032, introducing a new incentive for the production of fuels from waste, and bringing in new transportations sectors, such as aviation. The RTFO supports ethanol and biodiesel, as well as biomethane and renewable hydrogen. According to the U.K. Department for Transport, changes to the RTFO will require owners of transport fuel who supply at least 450,000 liters (118,877 gallons) per year to ensure the mix is at least 12.4 percent biofuel by 2032. The industry is currently only expected to meet a target of 4.75 percent biofuel. An intermediate target of 9.75 percent is also set for 2020. The regulations also set an additional target for advanced waste-based renewable fuels that starts at 0.1 percent in 2019 and increases to 2.8 percent by 2032. An initial cap of 4 percent crop-based biofuels is set for 2018. The cap is reduced annually from 2021 to reach 3 percent in 2026 and 2 percent in 2032.

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### **Gas-mobility: Driving Circular Economy in Transport**

The Natural & Biogas Vehicle Association (NGVA Europe) and the European Biogas Association (EBA) have released a joint roadmap, establishing the key role bioenergy will play in reducing greenhouse gas emissions in transport by 2030. A study on the market of European Natural Gas Vehicles (NGVs) estimated an increase in the fleet of NGVs by 2030 to a total of 13 million units. To accompany this market growth, the roadmap also estimated a significant growth in the production of renewable gases, up to a total of 45bcm up from today's 2bcm. The roadmap outlined that this estimation will theoretically manage the market evolution of NGVs and the fleet of 13 million units. Both NGVA Europe and EBA claim that by 2030, the calculated growth will provide a 45% reduction in greenhouse gas emissions compared to conventional fuels used today. In accordance with the circular economy model used as a key concept in the roadmap, in which sustainable biomass can be recycled into clean transport fuel, this evolution of bioenergy alongside the potential of 80% renewable gas-mixed fuel could lead to carbon neutrality by 2030.

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### **Biomethane reaches 90% share in Swedish vehicle gas**

The proportion of biomethane in vehicle grade gas at Swedish refueling stations continues to increase. New figures from Statistics Sweden for the first half of 2018 show that the renewable share in vehicle gas is just over 90 percent. In addition, new car registrations for July suggests that the government's introduction of "bonus-malus" environmental rules for new vehicles may already have had a positive effect on natural gas vehicle (NGV) sales.

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### **Two new case studies of Task 37 on biomethane**

IEA Bioenergy Task 37 has recently published two new case studies. In France, landfill gas containing roughly 40 to 50% methane but also 10-25% air was upgraded to biomethane with 98% methane using a new process that combines membrane separation with cryophilic upgrading. Another case study describes the first demonstration plant worldwide using the power to methane (P2M) combination of electrolysis and biological methanation established in Germany at Allendorf. The plant consists of a PEM-electrolyzer and a methanation unit forming the core of the plant and converts either carbon dioxide from the biogas upgrading process or directly raw biogas into biomethane with >98% methane. [More](#)

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