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IEA Bioenergy Task 37

Newsletter IEA Bioenergy Task 37: 01/2021

News from Task 37 member countries

Biogas conversion to green methanol in Denmark

Green methanol as a fuel gains momentum in Denmark as reported in the latest "Success Story" of Task 37. In the BioReFuel project, which runs from 2020 to 2023, Lemvig Biogas is assessing storage of electricity in the form of methanol obtained through conversion of CO2 in the biogas and renewable hydrogen via electrolysis. Haldor Topsøe, Aarhus University and others are examining the production of green methanol based on biogas. The applied technology involves splitting of biogas into CO and H2 using an electrically driven catalytic converter with additional energy injection in the form of hydrogen produced using electrolysis technology to convert the products of the split biogas into methanol. Methanol is a well-known fuel used in motor sports. M85 is a fuel blend of 85 percent green methanol, produced from biogas, and 15 percent gasoline. When used in gasoline cars the CO2 emissions can be reduced by 70%. The project "Biomethanol M85 on Danish fuel stations" will test M85 over the time period 2020 and 2022

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Australian first biomethane trial for NSW gas network

On behalf of the Australian Government, the Australian Renewable Energy Agency (ARENA) has announced $5.9 million in funding to trial injecting biomethane into the natural gas network in New South Wales. The demonstration scale project will upgrade biogas produced from the anaerobic digestion process at Sydney Water's Malabar wastewater treatment plant to biomethane. The project will see Sydney Water initially supply 95 terajoules (TJs) per year of zero emission biomethane. Under a long term agreement, this will be scaled up to 200 TJs annually, equivalent to the gas demand of approximately 13,300 homes. The Malabar plant is expected to produce the first biomethane for injection into the gas network in early 2022.

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Millions in Australian government funding for renewable methane

Australian Renewable Energy Agency (ARENA) which has committed over $55 million ($35 million USD) towards hydrogen initiatives so far, is spending $1.1 million in funding to APA Group to build a modular renewable methane production demonstration plant (power to methane) at their Wallumbilla Gas hub near Roma in Queensland, Australia. The demonstration plant will produce approximately 620kg of hydrogen per year, converting it into 74 gigajoules of methane that can then be injected into APA's natural gas pipelines across the East Coast Gas Grid. The renewable methane process involves the production of renewable hydrogen from an Anion Exchange Membrane (AEM) electrolyser. The electrolyser uses water extracted from the atmosphere and is powered by solar PV. The hydrogen produced is then converted to methane by reaction with carbon dioxide, which is also extracted directly from the atmosphere.

More

Bioenergy Australia leads open letter calling for biogas injection into gas networks

In Australia, an open letter to the Commonwealth government signed on behalf of thousands of organizations and businesses is advocating for biomethane injection into gas distribution networks – recognizing the role biogas can play to solve energy market decarbonization challenges while providing the lowest cost transition to a decarbonized energy system. This is the first coming together of the diverse cross sector to back the call on the government to recognize the potential of biogas, and in particular biomethane as a gas with a chemical composition very similar to natural gas, as submissions for the National Bioenergy Roadmap.

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Finland's post switched to biomethane fueled HDV

Postal Freight Services (Posti) has acquired ten new liquefied biogas (LBG) trucks. The investment is part of Post's aim to achieve carbon-neutrality in its own operations by 2030. Partnering with energy company Gasum will significantly promote a reduction in transport emissions. Posti already operates six liquefied natural gas (LNG) trucks from earlier. The new fleet of ten trucks is Finland's largest biogas fleet operated by a logistics company. In addition, Posti's total fleet of 16 gas-powered trucks is Finland's largest of its kind. The first biogas-power trucks have already been deployed and the full fleet will be in use by the end of 2020. Together, biogas-powered trucks will reduce carbon dioxide emissions originating in Posti's transports by 1,620 tons a year, which is the amount produced by driving a car almost 8.6 million kilometers, or 215 times around the globe.

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Biomethane can add substantially to the energy transition in Germany

Theoretically, biomethane could cover 40 percent of Germany's gas consumption by 2030 - even the realistically usable potential is sufficient for up to 13 percent of gas demand. The theoretical potential by 2030 is 35 billion m3 (bcm) per year, the realistic potential is still just under 12 bcm. By comparison, the Russian Nord Stream 2 gas pipeline is expected to transport up to 55 bcm of natural gas per year to Germany. Currently, only 219 out of the total of around 9,200 biogas plants in Germany have a treatment stage to separate the energy-rich biomethane from the biogas. However, biogas upgrading is not economically viable for some of the biogas plants because the plants are too small or too far away from the gas grid. And a part of the biomass potential will not be able to be exploited because it is too decentralized or used in other ways. Taking these limitations into account, the realistically exploitable potential is lower, but still sufficient to produce about 9 to 11.8 bcm of biomethane and thus cover about 10 to 13 percent of gas consumption.

More (in German)

SoCalGas is dispensing California produced RNG

Southern California Gas Co. (SoCalGas) is for the first time dispensing California-produced renewable natural gas (RNG) at many of the natural gas fueling stations it operates across the U.S. state. The utility recently began purchasing RNG from Calgren Dairy Fuels, which captures biogas from manure of dairy farms and turns it into RNG, a renewable fuel. SoCalGas has dispensed 100% RNG from out-of-state sources at its fueling stations for a year. Calgren's facility is part of a rapidly growing biomethane industry in California and is currently the largest dairy biogas operation in the U.S. Production of the fuel has accelerated quickly in California, supported by state incentive programs seeking to reduce greenhouse gas emissions from trucking and dairy farms. In just the next three and a half years, at least 160 RNG production facilities will be online in California to serve the transportation fuel sector, producing more than 15.8 million therms of carbon-negative RNG every year and replacing about 119 million gallons of diesel fuel. That's enough to reduce greenhouse gas emissions by over 3.4 million tons every year.

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Netherlands plan changes to biofuels law

A draft law published recently plans to incrementally lift the Dutch biofuel quota, which stipulates the minimum energy share of renewables in transport, from 16.4pc in 2022 to 27.1pc in 2030. The energy share of crop-based biofuels that obligated parties can count towards the quota will be capped at 1.2pc from 2022, down from the current cap of 5pc. On the other hand, the energy share of biofuels produced from used cooking oil (UCO) and animal fats is planned to be capped at 8.4pc with double counting from 2022, well above the limit of 3.4pc for double counting laid out in the RED II. As the use of waste-based biofuels accounted for around 70pc of total renewable energy in transport in 2019, the Dutch government sees the limit laid out in the RED II as a substantial restriction on the use of these biofuels.

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Swiss National Council has decided a heavy cut on road tax for biogas driven HDV

The Swiss National Council has made a pioneering decision in favor of freight transport in order to promote renewable energy driven commercial vehicles such as biogas trucks. In the future, the use of this renewable fuel will benefit from a reduction in the distance-related heavy vehicle fee (HVF). The HVF is a pricing point for transportation services in this country. The performance-based HGV tax is a federal tax that depends on the total weight, the level of emissions and the kilometers traveled in Switzerland. Currently, only electrically powered trucks have benefited from an HVF exemption. With the motion now adopted by the National Council, which was presented in 2019 by the Transport and Telecommunications Commission of the Council of States, the authorities have to regularly adapt the laws and regulations in the field of commercial vehicles to new technological developments. As a result, other commercial vehicles with alternative powertrains should benefit from a reduction in this rate. In the future, a partial exemption will be deducted for trucks that run on renewable gas. As soon as the motion implementation proposal is available, it will show how high the exact reduction will be. But it is already clear that the use of biomethane and liquefied biogas (LBG) will pay off for logistics companies. The environment also benefits: last year, the Federal Statistical Office assumed a transport performance of 17.8 billion ton-kilometers in Swiss freight traffic. If some of these are completed with biogas or LBG units as soon as possible, considerable amounts of CO2 can be saved. Several local logistics companies are already renovating their vehicle fleets and are using renewable gas to reduce greenhouse gases.

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