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IEA Bioenergy welcomes new Leaders

Mark Brown from the University of the Sunshine Coast, Australia, has been elected as the new Chair, succeeding Dina Bacovsky of BEST - Bioenergy and Sustainable Technologies GmbH, Austria. Assisting him there will be two Vice-Chairs: Birger Kerckow of Fachagentur Nachwachsende Rohstoffe e.V. (FNR), Germany, who continues in this role, and Anna Malmström of the Swedish Energy Agency, Sweden. Eric van den Heuvel of studio Gear Up B.V., The Netherlands, has been appointed as the new Technical Coordinator, taking over from Luc Pelkmans of Caprea Sustainable Solutions, Belgium. In Task 37 on biogas Bernhard Drosch from BEST in Austria succeeds Jan Liebetrau from Ryttec in Germany.

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IEA Bioenergy Country Reports: Update 2024

The summary report 'IEA Bioenergy Countries' Report – update 2024: Implementation of bioenergy in the IEA Bioenergy member countries' presents a comparative overview of the results for the different countries. Key highlights: (1) in many countries bioenergy still represents more than half of its renewable energy; (2) each country has specific characteristics impacting their

potential for bioenergy and other renewables; (3) bioenergy has made a major contribution to energy security in several countries; (4) liquid biofuels and biogas/biomethane are on the rise; (5) for heat and transport, bioenergy/biofuels are the dominant renewable energy type.

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Task 37: Reduction of methane emissions from biogas systems and landfills

Methane is emitted from a wide range of industrial, agricultural and waste management processes. The capture and treatment of emissions are not always technically and, under current conditions, not always economically feasible. A particular challenge is posed by waste gas streams with low methane concentrations, and low and variable volumetric flowrates. In his recent report Task 37 presents process technologies for methane oxidation, with a focus on processes that can convert waste gases with low methane concentrations emitted at low flow rates. The report includes examples of real-world applications of methane oxidation technologies.

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Task 37: Biogas Systems in Industry

Two new reports of Task 37 are highlighting the application of biogas systems in industry. [A first report](#) provides an overview of biogas production and consumption patterns in the industry of ten countries that are members of Task 37. As demonstrated by the country specific analysis, the availability of gas grid infrastructure can be vital to biogas uptake in an industry context. Alternative delivery options, such as virtual pipelines enable decentralized energy solutions, whereby biomethane is transported by trucks.

[A second report](#) focuses on anaerobic digestion in the food and beverage industry. The report provides detailed feedstock characteristics and gives a guide to the food and beverage industry on how a biogas project should be pursued and which typical questions arise. As a practical report a variety of international examples of biogas plants that are integrated into the food and beverage industry are presented.

New work program of Task 37

Starting a new triennium in the collaborative program of IEA Bioenergy, the team of Task 37 has developed a new work program. The main objective is to address the challenges related to the economic and environmental sustainability of biogas production and utilization. While there are many biogas plants in OECD countries, operation in the vast majority of cases can only be sustained with the help of subsidies to be able to compete with the fossil energy industrial sector. There is a clear need to enhance many of the process steps in the biogas production chain in order to reduce both investment and operating costs. In the 2022-2024 triennium the task will address the co-benefits of AD against this background, the conditions for a better manure utilization, the role of biomethane in industry and transportation and last but not least costs and marginal abatement cost. Within the technical questions, test systems and technologies for emission reduction are looked at.

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IEA: Pressing need to modernize the world's electricity grids

Today, there are 80 million kilometers of electricity grids globally – enough to reach the moon and back 100 times. But these grids need to be modernized and expanded, as demand for electricity is accelerating from industry and from the growing use of air conditioning, appliances, electric vehicles, heat pumps, artificial intelligence and other technologies. IEA analysis shows that global power demand in 2040 could reach a level requiring another 50 million kilometers of grids.

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Kanadevia Inova to build more installations enhancing circularity in Denmark

Bigadan A/S (short for Biogas Danmark) and Kanadevia Inova AG (formerly Hitachi Zosen Inova) are extending their collaboration with the ongoing development of more biogas plants in

Denmark. Bigadan, is a leading contractor in Denmark. One facility, located in Kalundborg in the northwest of the island of Zealand, converts biogenic waste residues from the production of insulin and enzymes into approximately 28 million Nm³ of biogas per year, which is then upgraded to biomethane. Currently, the carbon dioxide contained in the biogas is separated from the methane and released into the environment. However, in the future Bigadan will liquefy the CO₂ instead, which will contribute to a reduction in national CO₂ emissions. Kanadevia nova will build and supply the necessary plant technology allowing to achieve a liquefaction rate of more than 4,000 kg/h.

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BioCirc and Pentair enter into strategic partnership for the storage of biogenic CO₂

Danish biomethane producer BioCirc plans to work with Pentair to permanently store up to one million tons of biogenic CO₂ to support Denmark's climate targets by 2030. Pentair is supplying five CO₂ liquefaction plants to capture the CO₂ from biomethane production and prepare it for storage in the Greensand Future project in the North Sea. The initiative is funded by the Danish Energy Agency and is considered a pioneer for CO₂ storage in the EU. The project is scheduled to start at the end of 2025 or beginning of 2026.

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Converting CO₂ into methane with the help of battery waste

Battery waste poses a serious environmental problem as it contains substances that endanger both human health and ecosystems. However, they also contain valuable materials such as nickel, which are urgently needed. The Vienna University of Technology has developed a process for recovering nickel from used nickel-metal hydride batteries. Additionally, from this battery waste and used aluminum foil, a nano-catalyst was produced that converts CO₂ from the air into valuable methane. This approach reduces the waste problem and simultaneously produces climate-neutral fuel. The recovery of nickel from used Ni-MH is also of economic importance: In EU, used batteries scrap from battery production could supply 16% the nickel required by 2030. This potential, current recycling capacities in the EU and the UK are only about a tenth of what is required by 2030.

[More](#) (in German)

GHGSat research shows landfills are undercounting methane emissions

Methane gas is leaking from landfills at higher rates and more consistently than other major emitting sectors, a new report from the satellite monitoring company GHGSat found. In an analysis of 13 U.S. landfills, the firm found nine landfills were underreporting their methane emissions. While the company began its work monitoring wells for the oil and gas sector, it's placed an increasing focus on waste, where emissions are often less sporadic but more difficult to address. In 2023, the company's 12 satellites detected emissions totaling 378 million tons of carbon dioxide equivalent, with 183 million tons coming from the oil and gas sector, 103 million coming from the waste sector, 82 million coming from the mining sector and 10 million from other sources.

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Methane emissions in the biogas and biomethane supply chains in the EU

The report summarizes the current knowledge on the state of methane emissions from biogas plants. It delves into modern methods to detect and quantify biomethane emissions as well as best practices to mitigate them. Based on recent initiatives and good examples, the report defines a methodology to consider biomethane emissions within the greenhouse gas emissions assessment of biogas for CHP and biomethane pathways, consistent with the EU Renewable Energy Directive. The methodology relies on a set of best practices that allow to avoid and mitigate as much the methane emissions as possible while remaining feasible. Following the best practices allows operators to claim reduced default values for the greenhouse gas emissions.

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The biogas CAT is live

The Carbon Accounting Tool for Biogas (Biogas CAT) from the American Biogas Council accounts completely for all carbon impacts of biogas systems. For example, it accounts for the carbon impact of using or not using digested material to replace synthetic fertilizer. The Biogas CAT builds on existing compliance and voluntary carbon market methodologies to properly account for all life-cycle carbon emissions related to biogas production of any kind. CAT establishes a transparent and consistent carbon accounting framework and provides a fundamental measurement methodology for potential emission reduction claims from biogas systems. This tool offers policymakers a template to include biogas in their energy transition and climate plans, which utilize energy and non-energy purposes of biogas.

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Methane emissions in the biogas and biomethane supply chains in the EU

The recent report of the European Joint Research Center (JRC) summarizes the current knowledge on the state of methane emissions from biogas plants. It delves into modern methods to detect and quantify biomethane emissions as well as best practices to mitigate them. Based on recent initiatives and good examples, the report defines a methodology to consider biomethane emissions within the greenhouse gas emissions assessment of biogas for CHP and biomethane pathways, consistent with the EU Renewable Energy Directive. The methodology relies on a set of best practices that allow to avoid and mitigate as much the methane emissions as possible while remaining feasible. Following the best practices allows operators to claim reduced default values for the greenhouse gas emissions.

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Food losses and foreign matter in Swiss bio-waste 2022/23

Since 2012, there has been increased activity in Switzerland to quantify waste generated along the food chain and to introduce measures to prevent or recycle it. At consumer and private household level, the composition of separately collected biowaste was analyzed for the first time in 2018. Collected biowaste, including the proportion of food losses and foreign substances, was surveyed for the first time in 2018 and surveyed again in 2022. According to the data determined with corresponding extrapolation, in Switzerland around 157,000 tons of fresh matter, or 17.8 kg of food losses per person (fresh matter) can be expected from source separated municipal biowaste in Switzerland. Around 36 % of this food loss is avoidable. Compared to 2018, an increase in food losses in biowaste of around 35 % was observed. In relation to total food losses from households in Switzerland, 19 % of food losses in 2022 were disposed of via municipal green waste and 52 % was disposed of via garbage.

[More](#) (in German)

Germany: New federal state data tool on the energy transitions

The redesigned website 'Federal Energy Transition' illustrates information on renewable energies in the German federal states in the form of charts and tables. With around 250 constantly updated data sets, the German Renewable Energy Agency (AEE) uses this platform to illustrate progress and differences as well as the importance of the federal structure for the energy transition. For many years now, the website maintained by the AEE has been an important tool for collecting, analyzing and comparing data on the regional and supra-regional energy transition. It offers a unique collection of data in Germany - from A for the share of biogas in electricity generation to Z for the expansion of wind turbines. The redesigned site provides barrier-free access and improved functionality.

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Tadus: Will it become the Tesla of tractors?

Major manufacturers are reluctant to launch electric tractors on the market. Tadus GmbH is currently developing a completely new tractor with an electric drive. It is not a large corporation that is behind it, but the start-up of Bavarian couple Johanna and Thaddäus Baier. With their innovation, the two idealists want to fully exploit the advantages of electric power generation in terms of efficiency and versatility. Just as Elon Musk, who was completely inexperienced in automotive engineering, once built Tesla, they now want to build a series tractor in the 100 kW class from scratch with an electric drive and bring it to market. The test vehicle has a continuous output of 80 kW. A maximum output of 120 kW can be called up for short periods. The battery is housed in two sections of 25 kWh each, one under and one behind the tractor cab.

[More](#) (in German)

GRTgaz becomes NaTran

To mark its 20th anniversary, GRTgaz - the largest french gas grid operator is getting a new look! NaTran, a contraction of "transport", "transformation", "nature" and "transition", symbolizes the company's move towards low-carbon management of gas infrastructures. The new name better reflects the company's involvement in other types of gas, such as hydrogen and CO2.

[More](#) (in French)

Anew Climate announces strategic service agreement with Landwärme

Anew Climate, LLC, a leading biomethane and carbon removals company, announced a strategic agreement whereby Anew will service Landwärme's EEG and green gas contracts. The agreement was recently approved by the Federal Cartel Office and Landwärme creditors, and it is scheduled to close in the coming days. Anew Climate was selected by the Landwärme creditors committee to manage the company's remaining contracts due to many factors, including its longstanding success in the North American biomethane market, financial backing, and extensive experience in environmental commodities. Landwärme entered into self-administration proceedings on August 13, 2024, following the downturn in the German regulated transportation markets, which was fueled by suspected fraud tied to the import of biodiesel and upstream emission reduction projects (UER projects).

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