



## Newsletter IEA Bioenergy Task 37: 01/2022

Reports, Statistics and Analysis

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### IEA's update on global energy data

Data collection is at the heart of the IEA's mission, and the latest Key World Energy Statistics report is now out, offering a huge array of information across all fuels, technologies, sectors and countries. The report is an introduction to energy statistics, providing top-level numbers across the energy mix, from supply and demand, to prices and research budgets, including outlooks, energy indicators and definitions. And it's all available for free.

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### IEA: A case for regulating downstream methane emissions

Most efforts to reduce emissions of methane, a potent greenhouse gas, have focused on leakages or flaring at gas and oil fields – what are known as upstream activities. But recent revelations about the extent of methane emissions from refining, transmission, storage and distribution create a strong case for regulating downstream methane emissions as well. Worldwide, downstream methane emissions amounted to 16 Mt in 2020, or more than all the oil and gas methane emissions in North America combined. In major importers, such as Japan and some European countries, the downstream segment is responsible for more than 80% of methane emissions. Read IEA's recent commentary by that sets out ways that safety regulations can be adapted and financial incentives imposed to encourage companies to focus on methane.

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### World Energy Outlook 2021 shows a new energy economy is emerging

The *WEO-2021*, the IEA's annual flagship publication, shows that even as deployments of solar and wind go from strength to strength, the world's consumption of coal is growing strongly this year, pushing carbon dioxide emissions towards their second largest annual increase in history. The *WEO-2021* spells out clearly what is at stake: what the pledges to reduce emissions made by governments so far mean for the energy sector and the climate. And it sets out what needs to be done to move beyond these announced pledges towards a trajectory that would reach net zero emissions globally by mid-century. In the run-up to COP26, many countries have put new commitments on the table, detailing their contributions to the global effort to reach climate goals; more than 50 countries, as well as the entire European Union, have pledged to meet net zero emissions targets. If these are implemented in time and in full, as modelled in detail in our new Announced Pledges Scenario, they start to bend the global emissions curve down. But today's pledges cover less than 20% of the gap in emissions reductions that

needs to be closed by 2030 to keep a 1.5 °C path within reach. The successful pursuit of all announced pledges means that global energy-related CO<sub>2</sub> emissions fall by 40% only over the period to 2050.

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### **Task 37's report on RNG and its future in a decarbonised world**

Decarbonisation is about so much more than electricity; electricity itself only accounts for about 20% of final energy demand. The existing natural gas infrastructure is very extensive in many industrialised countries and rather than being viewed as a future redundancy associated with a fossil fuel system, it could instead be seen as offering huge benefits for green renewable gas as a future decarbonised energy carrier. Traditional renewable gas technologies (such as biogas and biomethane) can be considered mature. We have the technologies in place to make renewable gases from wet organic material, dry woody material and from electricity. Biomethane is perfectly suited to decarbonise the hard to abate sectors including heavy duty transport; high temperature industrial heat; agriculture; fertiliser and chemical production. When it is considered that at present in the EU and the USA, the natural gas grid provides more energy than the electricity grid. In the Task 37 report, six actions have been identified to optimise the future development of renewable gas systems and make it a success story. In the USA RNG has out beaten natural gas in transport while in Denmark biomethane substituted natural gas in the grid with over 25%.

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### **Three case stories on biogas from China**

By the end of 2021 IEA Task 37 has published three biogas success stories from China. The first plant treats pigmented waste water of the Lily group, Hangzhou. The facility treats 4.5 million tons of waste water annually in 10 UASB digesters of 1500m<sup>3</sup> each, reduces 11,250 tons of COD and produces 2.7 million cubic meters of biomethane. The second installation in Jinhua treats about 100 tons per day of kitchen waste from about 1700 restaurants and canteens in Jinhua City with an average daily biogas production of around 4,000 m<sup>3</sup>/d. The third unit digests corn straw in the north of China. The 2MWe facility treats 30,000 tons of crushed and ensiled yellow corn straw in two CSTR digesters of 4'000 m<sup>3</sup> each. The biogas yield reaches 320-350m<sup>3</sup>/t DM at a hydraulic retention time of 35d. About 16 GWh of electricity are produced annually.

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### **Foresight Scenarios for the EU bioeconomy in 2050**

The European Commission created an ad-hoc external Network of Experts for exploring possible scenarios towards the EU bioeconomy in 2050, with a focus on climate-neutrality and sustainable development. In April 2021, the expert group published a report presenting four scenarios for the future EU bioeconomy until 2050: Scenario 1: Do it for us - proactive policy, Paris target nearly achieved (2 °C global temperature increase by 2100), no societal change (Business As Usual trend for consumption); Scenario 2: Do it together – integrative policy, Paris target fully achieved (1.5 °C global temp. increase by 2100), fundamental societal change (towards sustainable consumption); Scenario 3: Do it ourselves - societal action, Paris target missed (global temperature increase 2.5 °C by 2100), fundamental societal change (towards sustainable consumption); Scenario 4: Do what is unavoidable - reactive policy, Paris target clearly missed (3.5 °C global temperature increase by 2100), no societal change (Business As Usual trend for consumption). Scenario 1 is particularly encouraging for the biogas sector as it includes a growth of the bioenergy and biomaterials. Indeed, the European Commission forecasts that the bio-based industry will grow by 20% until 2030 and by 50% until 2050, sustained by an intense flow of imported (and certified) biomass. This scenario foresees a favorable framework for the development of advanced biofuels derived from domestic residues and wastes by 2050. It also forecasts a 75% increase on biomethane production linked to animal farms by 2050, and a growth of the market for digestate of 67% during the same period of time.

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### **Third Showcase Report of Biogas World released**

The current Showcase Report of BiogasWorld is the third edition. It reflects the importance of the biogas and biomethane industry and its rapid development all over the world, even during the ongoing pandemic. The main aim of the document is to help project developers and other industry stakeholders explore existing biogas and biomethane technologies and equipment and showcase concrete examples of their implementation. The current report features 66 projects from 46 BiogasWorld members completed in Europe, Asia and North America. The report should help to grow the biogas and biomethane industry and connect the existing project developers and owners with product suppliers and service providers.

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### **World Biogas Association published new biogas report**

The US and EU made a joint pledge last week to deliver a 30% cut in global methane emissions by 2030. Climate experts have welcomed this as one of the most significant milestones yet towards fulfilling the Paris Agreement. It is a gamechanger for this industry. The CCAC's Global Methane Assessment and EU's Methane Strategy published earlier this year placed anaerobic digestion (AD) and biogas in the vanguard of readily available, low-cost technologies to deliver cuts in methane emissions across agriculture, waste management and wastewater treatment. As indeed it should be – 18% of methane emissions worldwide are derived from rotting organic wastes, according to the Global Methane Initiative. WBA's own report "Biogas: Pathways to 2030" outlining the various policy options countries have to support the rapid deployment of AD, the tools are at their disposal.

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### **ERGaR has launched its Certificate of Origin Scheme**

The Executive Board of the European Renewable Gas Registry (ERGaR) is pleased to announce that the ERGaR Certificate of Origin (CoO) Scheme has been launched. Two system participants – Vertogas (NL) and the Green Gas Certification Scheme (UK) – have performed the first exchange, transferring biomethane certificates from the Netherlands to the United Kingdom. STX Commodities initiated the transfer and was involved as trader at both ends. Since its foundation in 2016, ERGaR has dedicated itself to the establishment of an efficient, trustworthy and professional administrative system, enabling the cross-border transfer and distribution of renewable gases throughout the interconnected European gas network, while simultaneously preventing the risk of double sale. The Scheme is designed to handle hydrocarbon gases, hydrogen and biomethane, as well as other renewable gases. The ERGaR CoO is an electronic document that records information about renewable gas certificates in a harmonised manner, while still respecting the individual requirements of different national registries. After the successful connection of the biomethane registries of AGCS (AT), dena (DE), Energinet (DK) and GRdF (FR), the ERGaR CoO Scheme will represent about 90 % of European biomethane production volume.

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### **NGVA's 2020 gas vehicle statistics**

NGVA Europe's latest numbers demonstrate that both the infrastructure and new vehicle registrations support the necessary transition towards carbon neutral mobility. Europe's rapidly growing gas fueling station network has reached the milestone of 4.000 CNG, and 400 LNG stations. These stations are crucial as they are able to support Europe's g-mobility fleet, with also a rapidly increasing share of biomethane. Since 2020, about 300 new CNG stations have been set up, which represents a growth of 8,1%. At the same time, the amount of LNG stations grew from about 250 to 400, which is a massive plus of 60%. This huge gain is reflected in equivalent LNG vehicle registrations. In 2020, out of all gas fueling stations, more than 25% were already delivering biomethane to European consumers. This amounts to a 17% average of all gas which is used as a transport fuel, and which continues to grow daily. By 2030, a European average of 40% biomethane will be available to power the entire NGV fleet which is currently estimated to include more than 13 million vehicles. This will result in an overall GHG emissions reduction of 55%. NGVA Europe is estimating that by then, there will be about 10.000 CNG, and 2.000 LNG stations in Europe. there have been 55.028 new registrations of passenger cars, in addition to 3.189 new buses. According to the European Automobile Manufacturers' Association (ACEA), 11.4% of all new buses sold in the European Union in 2020 ran on alternative fuels – and nearly all of them are powered by natural gas. Among the big winners are France, Spain and Sweden which have all witnessed growth in the double-digits. The largest increase in registrations was recorded in truck sales: there has been a huge addition of 6.802 new CNG and LNG trucks in Europe. 99% of all sold alternatively powered trucks run on natural gas, whereas the largest amount of sales was recorded in Germany.

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### **Biogas from animal manure in Switzerland**

The white paper entitled "Biogas from manure in Switzerland" aims to provide decision-makers, administrations and stakeholders with the latest research results of the SCCER BIOSWEET on the optimal use of bioenergy from manure for the Swiss energy transition. The main result of the research is that the energetic use of manure in Switzerland could be much larger than today. About 110 agricultural biogas units provide 1440 terajoules (TJ) per year, a considerable part of which is due to co-substrate fermentation. Thus, today only a fraction of the available manure is utilized for energy. Swiss agriculture represents 12.7% of the country's total GHG emissions, of which 19% is due to manure management. AD could offer opportunities to reach the goals of the Energy Strategy 2050 and to support the country's commitment to the Paris Agreement. The white paper assesses the situation

regarding manure in Switzerland to identify the reasons for its low utilization for energy application. It presents manure characteristics as a feedstock with regard to its primary energy content, spatial distribution, and hotspots. [More](#)

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