



Technology Collaboration Programme
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IEA Bioenergy 2024: Conference in São Paulo

Every three years IEA Bioenergy organizes a conference to present the main developments in the bioenergy field. The conference brought important topics such as responsible land use and agricultural productivity; feedstock mobilization; sustainability of bioenergy pathways; biofuels for air, sea and road transport; heat and power from biomass and waste; renewable gases; the future of biorefineries; the use of biogenic carbon; and strategies for the circular carbon economy. Apart from key contributions and a round table, the different topics were addressed in specific parallel sessions. Session 3 dealt with Biogas and Biomethane.

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Liquefied Natural Gas quality database

Due to the absence of a public database on LNG quality, MARCOGAZ decided to gather information from its members and share it with the general public. The data collected was used to calculate key gas quality parameters by origin, such as average composition, standard deviation, maximum and minimum values, gross calorific value, Wobbe index, relative density, density, and Methane number under ISO reference conditions. It is acknowledged that LNG composition can

change during transportation and storage, meaning the data represents the LNG quality upon arrival in Europe rather than its original state after liquefaction.

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[Gasification's role in supporting Europe's energy transition](#)

The European Biogas Association (EBA) launched a comprehensive paper and an interactive map of operational and under construction gasification plants across Europe, exploring the potential of gasification technology in the future energy system. According to the EBA white paper, Europe is currently home to approximately 141 biomass and waste gasification installations, with an additional 54 projects under development. Germany leads the way with 61 installations, while France, Finland, and Italy are also emerging as significant contributors to this growing market. 75% of the feedstock used in gasification comes from forestry and agricultural residues. Waste streams account for about 7%, while the remaining facilities utilize mixed feedstock sources.

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[Biomethane Observatory in France: key figures for 2023](#)

The French biomethane sector may have developed less rapidly than in previous years, but it remains one of the most dynamic in the world. These are the findings of the 8th edition of the Biomethane Barometer, published annually by SIA Partners. With more than 9 TWh of biomethane injected into the grid in 2023, the French industry has far exceeded the target set by the French Pluriannual Energy Program (PPE), initially set at 6 TWh.

This result testifies to the sustained growth of the sector, which now counts 652 units in service, an increase of 27% in one year. By way of comparison, the number of biogas units used for cogeneration rose by just 8% over the same period. In terms of the breakdown by type of plant, the agricultural sector continues to account for a large share of production, with 85% of installations.

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[Green Gas Conference](#)

The annual grüngas24 trade congress took place from December 4 to 6, 2024, organized for the second time in cooperation between the Austrian Compost and Biogas Association and Green Gas Service GmbH. Due to its 20th anniversary, the congress was expanded to include the topics of wood gas and hydrogen. It brought together the German speaking scene around renewable gases to shed light on current topics from the perspective of business, politics and other stakeholders. All the contributions can be downloaded.

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[Global bioenergy statistics](#)

The Global Bioenergy Statistics (GBS) report is the main annual publication of WBA. The report focuses on the global development of biomass to energy – supply, production, and consumption. The data is presented on different geographical levels – global, continental, and regional levels covering all sectors of bioenergy – liquid biofuels, biogas, pellets, forestry, agriculture, waste, etc.

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[Eurogas: Ensuring Resilience in the European Energy Transition](#)

In Collaboration with Frontier Economics, Eurogas focuses on identifying the most cost-effective energy supply—encompassing electrons and molecules—to meet energy and non-energy needs across 30 end-use sectors in Europe. The Cross Sector Optimisation Model for the Energy Transition (COMET) features high regional granularity and integrates various complex energy supply and conversion chains. Unlike studies such as the TYNDP of Entsoe and Entsoe, the research made no restrictive assumptions about the future role of gases. Instead, our analysis

explores an optimal mix of renewable electricity and diverse gas solutions. Even in scenarios with high electrification and rapid renewable deployment, gases remain essential to achieving net-zero by 2050. When shifting from highly optimistic to more realistic assumptions, it becomes evident that leveraging all available technologies—renewables, low-carbon gases, and carbon capture—is indispensable.

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EBA Statistical Report 2024 published

The 14th EBA Statistical Report provides the most comprehensive analysis of the current state and future potential of the biogas and biomethane industries in Europe. It includes analysis on the various uses of biogases, with a specific section on transport, its contribution to the European economy, and detailed profiles of biogas developments across 28 European countries. Combined biogas and biomethane production in 2023 amounted to 22 bcm. This is more than the entire inland natural gas demand of Belgium, Denmark, and Ireland combined, and represents 7% of the natural gas consumption of the European Union in 2023.

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Biomethane barometer 2024 of the German industry

The barometer is compiled with the help of a questionnaire and individual interviews as well as the inclusion of data from the German biogas register and relevant third-party publications. The German biomethane market is going through a phase of transformation. Despite turbulence, such as the threat of trader insolvencies and price fluctuations, there has been an increase in planning and construction activities. Driven by the economically lucrative situation in the area of the greenhouse gas reduction quota (GHG quota) by the end of 2022, there has been a noticeable increase in planning and construction activities for waste- and residue-based biomethane projects. Well over 200 grid connection applications have been submitted in recent years. However, with the sharp fall in prices in GHG quota trading, it is unlikely that all requests will be implemented. With supposedly advanced fuels, re-declared biodiesel volumes and fraudulent UER projects (Upstream Emission Reduction) projects by China, the quota price crashed in 2023 that planned projects were cancelled. On top, another major biomethane trader had to file for insolvency. As a result, one major biomethane trader has already run into difficulties and filed for bankruptcy.

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Trading of biomethane certificates confirms solid tracking systems

EBA, ERGaR, Eurogas, and the RNG Coalition engaged S&P Global to review biomethane certification and tracking systems in Europe and the USA. The analysis examines the role of certificates for producers and consumers. Biomethane is a key driver of GHG emissions reductions, amounting to reductions of around 15 million metric tons of CO₂e in the EU in 2023 and around 5 million metric tons of CO₂e in the US. Demand for biomethane procured via certificates comes from compliance markets (e.g. road transport fuels) and increasingly voluntary markets, with leading European and US corporations such as food and beverage companies, chemicals producers or shipping companies.

In the EU, the trading of biomethane is legally tracked through Guarantees of Origin (GOs) and Proof of Sustainability (PoS) certifications. A significant part of this growth needs to come from the voluntary market where the GHG Protocol guidance is an essential element as many companies rely on the protocol as main tool to account and report their GHG emissions.

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Biogas Plants - The Key to a Secure Power Supply in Germany

In a comprehensive study commissioned by the German Biogas Association, the Friedrich-Alexander University of Erlangen-Nuremberg (FAU) investigated the role that biogas plants should

play in our future energy supply. The study concludes that retrofitting biogas plants with biogas storage systems, combined with upgrading existing combined heat and power plants, could provide around 12 gigawatts (GW) of secured capacity by 2030. In combination with hydrogen power plants, a total of 25.9 GW of reserve capacity could be available.

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EV owners eyeing gas

Across Europe, 19 percent of electric vehicle owners are likely or very likely to switch back to a traditional combustion engine vehicle, according to a McKinsey Mobility Consumer Pulse Survey. The authors explain that the share of electric-vehicle owners who say they would consider switching back varies by country: 24 percent of owners in Germany would consider switching back, compared with 18 percent of owners in France and Norway and 15 percent in Italy. The global average is 29 percent.

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Biomethane to gradually replace natural gas in final energy consumption

Gases are uniquely positioned to ensure the affordability, security and sustainability of Europe's energy system, according to a new report by Frontier Economics. The report, entitled *Ensuring Resilience in the European Energy Transition: Strategic Use of Gases to Deliver EU Climate Ambition, 2024*, gas, renewable and low-carbon gases in delivering Europe's net zero energy transition by 2050. Working alongside increasing electrification, gases can help ensure the energy system is fit to support industrial competitiveness and protected from geopolitical risk, according to the study. Contrary to common framing of gas as merely a transition fuel, the report shows that by 2050 gases will remain crucial in final energy demand.

Hydrogen and its derivatives may emerge as the second-largest energy carrier, with biomethane gradually replacing natural gas in final energy consumption.

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North American RNG Surpasses 400 Operational Facilities

The Coalition for Renewable Natural Gas (RNG Coalition) announces a major milestone in the growth of the renewable natural gas industry, with 433 facilities now operational across North America. This achievement represents a significant leap from just a year ago, when the North American RNG industry celebrated the establishment of 300 facilities, marking a remarkable 44% growth within just one year. Expanding policy support like the recent launched Clean Fuel Standard (CFS) program of New Mexico's, drives the development of RNG injection. Dairy farm-to-RNG projects represent another key driver of recent facility growth. Agricultural waste now represents 24% of all feedstocks deployed toward RNG production, marking a new all-time high and an increase from 17% of all feedstocks just a year ago.

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EU biomethane target 'a curse not a cure'

The EU's target of 35 billion cubic meters of annual biomethane production is driving livestock farming intensification, according to a report presented at the Biomethane Week. The 2030 target, agreed by the EU in the REPowerEU Plan, is an incentive to expand livestock production and increase competition for land, it says. One of the perverse consequences of the biomethane rush is the ironic replacement of dependence on natural gas imports with dependence on animal feed," explained Francesca Magnolo, the expert who conducted the research.

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Deloitte Calls for more RNG production from public utilities

Deloitte recently released a new report that highlights how renewable natural gas (RNG) can

revolutionize the landscape for public gas utilities. Over a year ago, Deloitte collaborated with the Center for Energy Workforce Development, American Gas Association, and American Public Gas Association on this report, which looks at the implications of decarbonization on gas utilities and their workforce. They identified three value-creating strategies that utilities could deploy over the next decades. The first and immediately deployable one is to renew supply by ramping up renewable natural gas. According to Deloitte estimates – which are higher than current industry predictions – RNG from waste could displace around 4.4% of current total US fossil demand, 16.5% of core gas customer demand, and more than half the demand in the chemicals subsector, if all public and private landfills and wastewater plants captured biogas and upgraded to renewable natural gas production.

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Report shows how methane emission in the US can be cut 30% by 2030

A new Environmental Protection Agency (EPA) rule clamping down on the oil and gas industry's methane emissions could get the U.S. just over halfway to 30 percent by 2030. Reducing methane from food waste and agricultural waste via anaerobic digestion (AD) could take the country the rest of the way, and is the most impactful and cost-effective option for cutting methane from organic waste, according to a new report by nonprofit Energy Vision. This two-part series explores potential to drastically reduce methane release. Read on for an in-depth comparison of cost and impact of various measures targeting each of these sources, with a focus on anaerobic digestion on the organics front, and on new emissions-mitigation measures imposed on the oil and gas sector.

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Metering technologies for non-conventional gases

A recent publication of Marcogaz discusses the integration of unconventional gases into European gas networks as a key step toward decarbonizing industries and meeting emission reduction goals. It highlights the initiation of demonstration projects with emerging and mature technologies to cater to different gas types. In 2022, MARCOGAZ conducted a survey to gather information on measurement systems for these projects, aiming to identify market needs and trends. The survey categorized projects into those focused on gas injection into pipelines and those on gas measurement, detailing measurement technologies, energy determination methods, and regulatory frameworks. This survey will be a recurring tool for identifying trends and fostering new activities.

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