

International Newsletter #3

April 2024



BIOMETHAVERSE (Demonstrating and Connecting Production Innovations in the Biomethane Universe) sets out to diversify the technology basis for biomethane production in Europe, increase its cost-effectiveness and contribute to the uptake of biomethane technologies. To this aim, 5 innovative biomethane production pathways will be demonstrated in five European countries: France, Greece, Italy, Sweden and Ukraine.

News from the biomethane universe

Find out what is tending in the biomethane, biogas and renewable energy sector

Biomethane production up 20% in 2022, boosting renewable gas ramp-up

Embracing a mix of renewable energy sources, including biogas, is key for Europe to break free from external energy providers. Why should Europe bet on biogases?

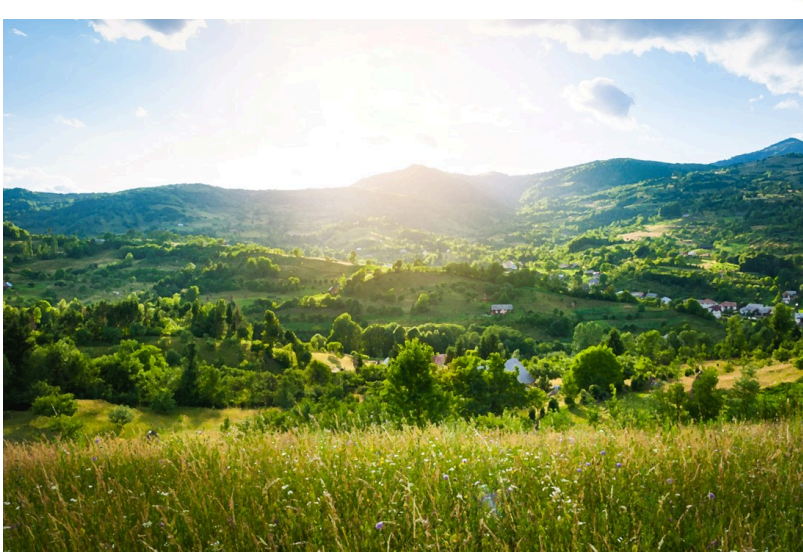
A growing sustainable sector. In 2022, Europe's biogases production amounted to 21 bcm. Biomethane production alone grew from 3.5 bcm in 2021 to 4.2 bcm in 2022! The installed capacity now stands at 4.5 bcm. This incredible progress is driven by 1,323 biomethane installations spread across 24 European countries.

Biomethane's versatility. Biomethane offers a key benefit as it can be directly injected into the gas grid, gradually replacing fossil gas across various applications such as electricity generation, heating, and industrial processes. The numbers show how versatile biomethane is as a renewable energy source: in 2022, 22% of upgraded biogas was used for buildings, 14% was used in industry, 19% for transport, and 15% for power generation.

Beyond energy. In 2022, Europe produced 31 Mt (DM) of digestate, a sustainable fertiliser derived from biogas production. Digestate not only makes Europe more self-reliant, ensuring strategic autonomy, but also contributes significantly to global food security. There's more! By choosing digestate, Europe could save 10 Mt of CO<sub>2</sub> equivalent and reduce natural gas consumption by 2 bcm.



Looking for more information about biogases deployment in Europe? Check out the latest EBA Statistical Report, [here](#).



Biogas sector deemed necessary to strengthen system resilience

Last February, the European Commission published its 2040 Climate Target proposal, aiming for a 90% reduction in greenhouse gas emissions. This target represents a clear and necessary response to the ongoing climate crisis and the biogas and biomethane sectors are ready to significantly contribute to its achievement.

Biogases are a crucial cornerstone of a carbon-neutral and competitive European economy and, as recognised in the proposal, the sector is a "win-win solution" that must be prioritised to maintain and strengthen the EU's competitiveness and support the climate mitigation agenda. Nevertheless, there is disappointment within the biogas sector that biogas and biomethane are considered secondary to other energy vectors in achieving the 2040 target, with their significant roles in integrating and enhancing the flexibility of the energy system often undervalued.

More insights into the European Biogas Association's perspective on this matter are available [here](#).

"The energy sector is leading the way in Europe's decarbonisation and emissions reduction, and we must continue on this path towards 2040. In the 2030s we should see major progress in the transition away from fossil fuels, and an increasing share of renewables in our energy mix. We are sending a clear signal to investors that Europe is staying the course and offers them long-term predictability and stability. For our citizens, we are giving a clear sign that cleaner solutions are on the way, and that we are accompanying them in the transition."

Kadri Simson, EU Commissioner for Energy

(Source: [https://ec.europa.eu/commission/presscorner/detail/en/24\\_588](https://ec.europa.eu/commission/presscorner/detail/en/24_588))

Pills from the project

Discover project activities and insights coming from BIOMETHAVERSE's research team

Highlights from the BIOMETHAVERSE Workshop

BIOMETHAVERSE's 2023 activities concluded with the hosting of a workshop designed to present and evaluate the advanced technologies that will be tested as part of the project.

The event, organised by the [CIC](#) (Consorzio Italiano Compostatori), in collaboration with other Italian project partners – [CAP Holding Group](#), [ENEA](#), [ISINNOVA](#), [Politecnico di Milano](#), and [SIAD](#) – took place in Milan on 1 December 2023, alongside BIOMETHAVERSE's General Assembly.

The Workshop was designed to provide a comprehensive overview of BIOMETHAVERSE's innovative production pathways, placing the project's technological advancements within the current European biomethane production and regulatory landscape. The debate and exchange of ideas on the topic were highly engaging, with over 50 attendees between biogas/biomethane experts, stakeholders, and project partners.

The presentations of the sessions are available [here](#).



Coming Soon – Summary of Pilots' Plant Design Reports Scheduled for May 2024

The collaborative efforts within WP2, alongside the [five pilot sites](#), have successfully culminated in the delivery of a comprehensive report (D2.2) detailing the design specifics of each pilot plant, including mass and energy balances. Given the sensitive nature of the data, the document will remain confidential and not accessible to the public.

However, to engage a broader audience with project activities, in May 2024, [EBA](#) (WP2 leader) will deliver a public-facing summary (D2.3) of the individual design reports of pilot plants detailed in D2.2, allowing investors, plant developers, policymakers, the scientific community, and anyone interested to access a concise overview of the pilots' plant designs. Upon its release, the document will be available for download from WP2's Deliverable section on the project's website, [here](#).

Next Up

3rd Technical Workshop + 4th General Assembly + Greek Demo site visit  
Thessaloniki, 18 – 20 June 2024

Flashes from our Demos/Countries

Updates from our pilot demonstration sites, where innovations in the biomethane universe happen!

In-Situ and Ex-Situ Electro-methanogenesis (EMG) in France



In the framework of Biomethaverse project, the work that aims to develop the technology of electromethanogenesis has just reached an important milestone. The laboratory-scale tests of the two technologies (one and two chambers) are completed and have validated the principle and performance of these processes. The next step is to carry out tests at a pre-pilot scale of several liters to evaluate the behavior of the technologies in conditions closer to the ones of the pilots. [Read More](#)

Ex-Situ Biological Methanation (EBM) in Italy



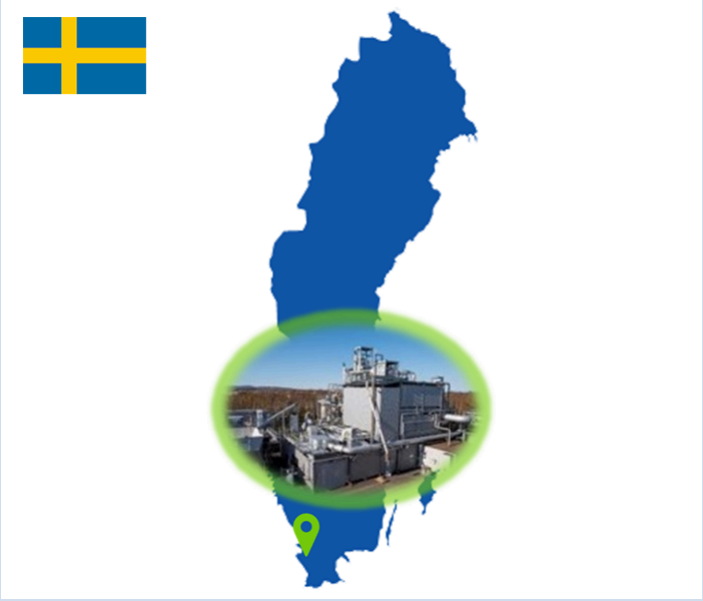
In the coming weeks, the Italian demo-site will see the completion of the installation of the ozonolysis plant and all its components, including the tank for liquid oxygen, which, converted into ozone, will treat the sludge entering the digester, thus increasing the production of biomethane and reducing the waste produced by the facility. At the same time, the design of the area that will host the biological upgrading pilot plant, capable of generating additional biomethane from the union of hydrogen with residual CO<sub>2</sub>, and the codigestion pilot plant is continuing. [Read More](#)

Ex-Situ Thermochemical/catalytic Methanation (ETM) in Greece



Lab-scale experiments to monitor catalysts' performance. Nickel-based catalysts, widely acknowledged for their impressive catalytic properties and cost-effectiveness, are central to methanation research. These catalysts are crucial in transforming carbon dioxide into methane, achieving notable conversion rates. However, this is a challenging procedure. Issues such as carbon buildup, particle agglomeration, and sulfur poisoning must be carefully addressed. [Read More](#)

Ex-Situ Syngas Biological Methanation (ESB) in Sweden



Syngas pilot in Högånäs. The preparations at [Cortus AB's](#) facility in Högånäs to be able to host the Swedish project are now complete. [Read More](#)

In-Situ Biological Methanation (IBM) in Ukraine



VITAGRO ENERGY's biomethane plant. The second biomethane plant was built in Ukraine in 2024. This is a plant of VITAGRO ENERGY, located in Khmelnytskyi region. Feedstock for biomethane production is agricultural residuals (straw and other harvest materials) and livestock waste (cattle manure and chicken litter). [Read More](#)

Challenges for biomethane market development in Ukraine. Ukrainian producers encounter several challenges typical of emerging markets. This is due to the unsettled legislation, the fear of officials to take responsibility for the necessary decisions, the lack of regulated procedures and the absence of answers to arising practical questions. [Read More](#)

Meet the BIOMETHAVERSE Team

The BIOMETHAVERSE multidisciplinary consortium includes 22 partners from 9 European Countries on a 5-year mission to test and deliver market-ready innovations in biomethane production.



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