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Horizon Europe Value4Farm project achieves key milestones in supporting sustainability in agriculture

- €6.9m project aims to demonstrate successful integration of biogas and agrivoltaics technologies on farms in a bid to defossilise agriculture and boost food production
- Three demonstration sites in Belgium, Denmark and Italy used to establish diverse environmental conditions and technical requirements
- Study establishes farmers' needs ahead of developing Decision Support Tool
- Analysis of national regulations and policies carried out to stimulate implementation across Europe
- Advisory boards set up to steer research and secure stakeholders' engagement with the project and output uptake

Imagine a farm that not only produces food but also generates its own renewable energy. That is exactly what the Horizon Europe project [Value4Farm](#) aims to achieve. By the end of 2024, the project had taken important steps to help farmers integrate biogas and agrivoltaic technologies into their operations, with the goal of making agriculture more sustainable and food production more efficient.

Launched in September 2023, Value4Farm is a €6.9m project funded by the European Union under its Horizon Europe Research and Innovation programme. It aims to defossilise agriculture by integrating energy production technologies – biogas and agrivoltaics – with food production systems on farms of various sizes and under various climatic and geological environments. The 42-month project brings together 14 partners from 10 countries across Europe into a Consortium working on the development of demonstration sites in Belgium, Denmark and Italy. Once the effectiveness, sustainability, feasibility and viability of the renewable-based value chains implemented on those sites are established, replication sites will be developed in Iceland, Italy and Poland. The ultimate objective of this research is to reduce the carbon footprint of the European agriculture sector, which currently contributes over 10 % of the overall GHG emissions generated by the EU.

The first phase of the project consisted in ensuring that farmers and a range of stakeholders were involved from the start to enable Consortium partners to fully understand their needs, challenges and concerns related to integrated food and production, and to use these views to steer their work towards achieving the overall objective of Value4Farm.

Identifying farmers' requirements was an initial task led by the **University of Reading**, who conducted a comprehensive survey of 170 European farmers to map their needs in terms of crops and energy demand and provide guidelines for developing a Decision Support Tool to establish the best options for their specific circumstances. Meanwhile, the **Università Cattolica del Sacro Cuore** (UCSC) identified the environmental conditions and technical requirements for the Value4Farm demonstration sites, and the **Helmholtz Centre for Environmental Research** (UFZ) carried out an analysis of the regulation framework, reviewing policies that can regulate and stimulate the implementation of the Value4Farm innovative value chains. Finally, the **World Biogas Association** (WBA) led the recruitment of external stakeholders into two Advisory Boards– technology providers and end-users - whose role will be to regularly review progress and provide feedback and expertise to steer the project towards the successful deployment of the Value4Farm solutions.

The next phase of the project, now ongoing and led by project coordinators **Inagro**, focuses on developing flameless microturbines, establishing renewable-based agricultural protocols for different regions, and conducting a comprehensive study on off-grid biomethane plants. The protocols have now been published, marking significant progress in the partners' efforts to implement these sustainable agricultural practices.

Sander Vandendriessche, Researcher with project leaders Inagro, said: *"Farmers are challenged with the task of working more sustainably without sacrificing their productivity. Once again this year, Value4Farm demonstrates that this balance is achievable, proving that renewable energy and agriculture can coexist seamlessly. We eagerly anticipate taking even more significant steps in 2025 to further this success story."*

On the partners' agenda for 2025 are:

- Installation of some promising technologies at the Belgium biogas plant of Inagro, including a microturbine and in-situ biomethanation pilot plant
- Data collection of the technologies assessed at the three demo sites in Denmark, Italy and Belgium to enable Life Cycle and Techno-Economic Assessments as well as the start of the work on policy recommendations
- Research via cluster activities with other Horizon Europe projects (Area Zero and Biomethane clusters)
- First visits to the demonstration sites for industry, farmers and policy makers.

The outcome of the first months of activities in the Value4Farm project can be found on the project website www.value4farm.eu, with the reports accessible under "Resources".

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For more information and to arrange interviews, contact:

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- The Value4Farm project is funded by the European Union's Horizon Europe Research and Innovation programme under Grant Agreement No. 101116076. Launched in September 2023, it will end in February 2027
- The partners in the Value4Farm project are:
 - Aarhus Universit t (Denmark)
 - Consorzio Italiano Biogas e Gassificazione (Italy)
 - Energy Institute Hrvoje Pozar - Energetski Institut Hrvoje Pozar (Croatia)
 - Euroquality (France)
 - Inagro (Belgium)
 - Institute of Soil Science and Plant Cultivation - Instytut Uprawy Nawozenia i Gleboznawstwa, Panstwowy Instytut Badawczy (IUNG) (Poland)
 - Helmholtz Centre for Environmental Research (UFZ) (Germany)
 - Mitis (Belgium)
 - Orkidea (Iceland)
 - Remtec (Italy)
 - Universit  Cattolica del Sacro Cuore (Italy)
 - University of Reading (UK)

- Wageningen University (the Netherlands)
- World Biogas Association (UK)



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- Photo caption: The Value4Farm consortium partners at the 2nd Consortium Meeting held at Aarhus University in Viborg, Denmark, on September 11-12, 2024.



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