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ALFA

UNLOCKING THE BIOGAS POTENTIAL OF LIVESTOCK FARMING

D4.3

Replication guide and policy recommendations

White Research

31 / 10 / 2025

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Executive Summary

In three years of implementation, drawing on practical experiences across 6 Member States (Belgium, Denmark, Italy, Greece, Spain, Slovakia), the ALFA project provided tools and services to support the uptake of manure-based biogas in livestock farming. Based on ALFA's overall work and experience, this deliverable brings together two additional outputs: the **ALFA Policy Brief** and the **Replication Guide**. Together, these tools translate the project's findings into actionable insights for policymakers, regional authorities, and practitioners.

The ALFA Policy Brief presents a set of **evidence-based recommendations** to improve the regulatory, financial, and social frameworks governing biogas deployment. It identifies priority areas where policy action can simplify administrative processes, enhance financial incentives, promote cooperative feedstock supply models, and strengthen public trust and acceptance. These recommendations were shaped through intensive dialogue between project partners and stakeholders during ALFA's policy co-creation exercise and policy roundtable, where experts from policymaking, academia, industry, and NGOs examined how to improve policy coherence across energy, agriculture, and environmental domains.

Complementing this, **the ALFA Replication Guide** provides **practical tools, examples, and lessons** learned to support the replication of successful biogas business models across different European regions. WR led the process of collecting and consolidating inputs from project partners, who reported their implementation experiences through a structured template. Partners reflected on what worked well, what challenges were encountered, and what insights could improve replication in future initiatives. The guide, therefore, builds directly on real-world practice, offering step-by-step guidance to cooperatives, innovation advisors, and local stakeholders interested in establishing or scaling livestock-based biogas projects.

Both materials are grounded in extensive stakeholder engagement. Their content was informed by discussions held during several ALFA activities, but also from the latest policy co-creation exercise and roundtable that took place recently, along with ALFA's final event. These exchanges highlighted the need to recognise biogas as a cross-cutting infrastructure that delivers value beyond renewable energy, linking agriculture, waste management, and regional development.

The resulting recommendations address critical areas, including regulatory simplification, financial incentives, cooperative feedstock supply models, digestate and CO_2 valorisation, social acceptance, and grid access. Together, they offer a coherent policy and practical roadmap for accelerating biogas uptake across Europe's livestock farming sector.

A preliminary version of both the Policy Brief and the guide was shared with the participants during the ALFA final event and disseminated afterwards through ALFA's social media channels and the partners' networks.

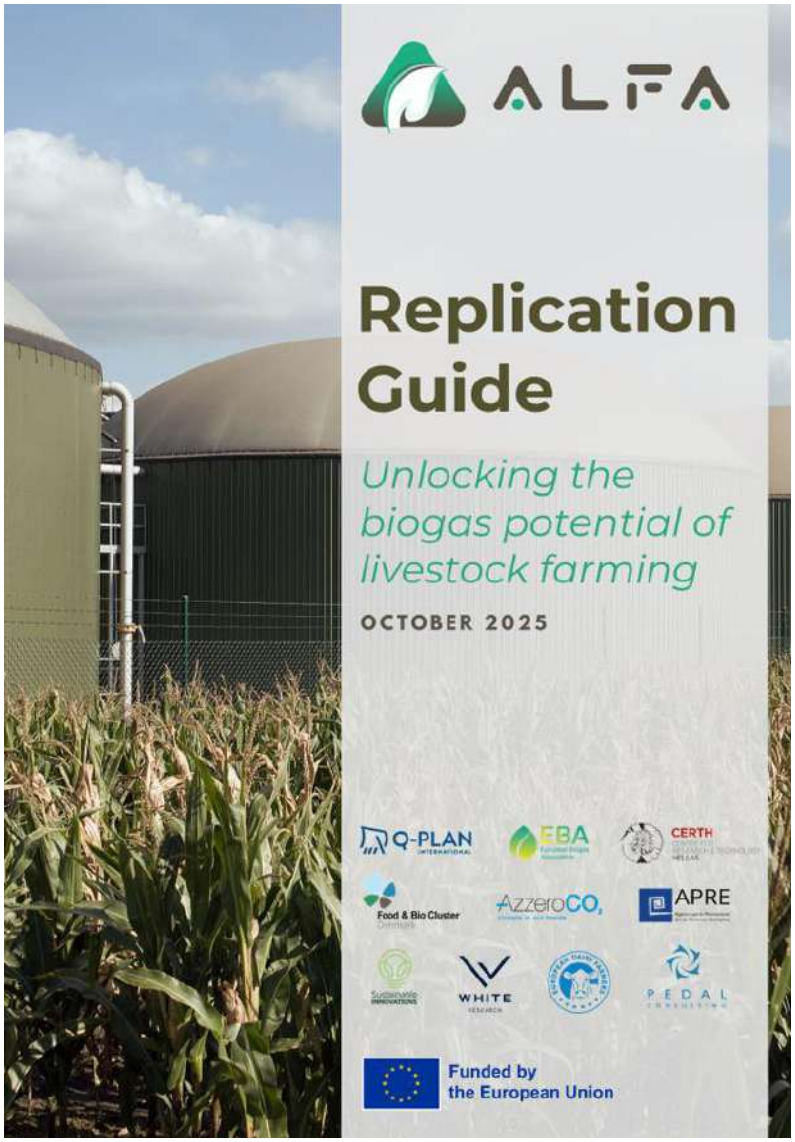
1. Replication Guide[1]

1.1 Approach

The ALFA Replication Guide was developed through a collaborative process aiming to capture practical experience and lessons learned from the project's six national hubs in its three years of implementation. WR led the input collection process, providing partners with a structured template (available here) to document, among other information, reflections on what worked well, what proved challenging, and what could be improved in future replication efforts.

The collected inputs were then consolidated, analysed, and harmonised to identify common patterns and enabling factors across the participating countries. This bottom-up approach ensured that the guide reflects real-world conditions and offers practical guidance for innovation advisors, cooperatives, and rural actors seeking to replicate ALFA's model.

1.2 The Guide



[1] For higher-quality version, please download ALFA's Replication guide here.

Replication Guide to Unlock the Biogas Potential of European Livestock Farming

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www.alfa-res.eu

Funded by the European Union

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About the ALFA project

In recent years, the EU has made notable progress in advancing renewable energy. Yet, the **uptake of biogas in the livestock farming sector remains limited**, often hindered by low awareness, technical complexity, and fragmented support systems. Despite its strong potential to reduce emissions, close resource loops, and promote energy self-sufficiency in rural areas, **biogas remains underutilised**, particularly among small and medium-sized farms.

The ambition of the EU-funded **ALFA project** is to unlock this untapped potential by creating the right conditions for **farm-scale biogas adoption**. Through regional hubs, tailored support services, and practical tools, ALFA empowers farmers and stakeholders to explore, assess, and implement biogas solutions. The project strengthens local capacities and encourages **climate-smart, decentralised energy production**, helping livestock farms build resilience and become active contributors to the green transition.

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Abbreviations

ARC	Awareness Raising Campaign
BGP	Biogas Plant
CapEx	Capital Expenditure
CHP	Combined Heat and Power
CNG	Compressed Natural Gas
DST	Decision Support Tool
EU	European Union
IRR	Internal Rate of Return
LNG	Liquified Natural Gas
NPV	Net Present Value
OpEx	Operational Expenditure
PESTLE	Political, Economic, Social, Technological, Legal, Environmental (analysis)
RES	Renewable Energy Sources
ROI	Return on Investment

Executive Summary

The ALFA project sets out to unlock the potential of biogas uptake in livestock farming using manure as a main feedstock. Over its implementation, ALFA established a network of Regional Hubs across Europe that offered targeted business and technical support services, carried out dedicated capacity-building and awareness-raising activities, and developed practical digital tools to guide farmers, advisors, and local actors in their transition toward the adoption of biogas solutions.

This replication guide serves a dual purpose: i) **To inform:** by providing a clear overview of ALFA's methodologies, service models, and implementation frameworks and ii) **To inspire:** by offering tested strategies that can be adapted to local conditions to enhance the adoption of biogas technologies. It is designed to help authorities, organisations, and industry actors who wish to replicate or adapt the ALFA model in their own regions. Rather than a one-size-fits-all solution, ALFA demonstrated that local contexts matter, since policies, available feedstock, and market readiness vary greatly, and therefore services must be tailored to specific needs.

The guide outlines the main elements of ALFA's approach, including the creation of Regional Hubs, two rounds of Open Calls for business and technical support, and a set of user-friendly tools such as the Engagement Platform, the Decision Support Tool, the Atlas Map of biogas cases, the Knowledge Center, and the Biogas Forum. It also highlights the value of awareness-raising campaigns, built on findings from early co-creation sessions, to dispel misconceptions about biogas and present real opportunities in livestock farming.

Through this process, ALFA generated a series of practical recommendations for replication. ALFA's experience shows that with the right mix of local engagement, targeted support services, and accessible tools, small-scale farmers can successfully uptake biogas systems on their farms. This replication guide is intended as both inspiration and a practical roadmap. By following the steps outlined here, regions across Europe and beyond can build on ALFA's model, adapt it to their own conditions, and accelerate the deployment of biogas solutions.

Introduction

This Replication Guide offers practical recommendations, lessons learned, and tested service approaches to support the deployment of biogas solutions in the livestock sector. It is aimed at public authorities, farmer associations, innovators, and service providers working to accelerate renewable energy adoption in rural areas.

The content presented here is based on the work of ***ALFA – Scaling up the market uptake of Renewable Energy Systems by unlocking the biogas potential of Agriculture and Livestock FArming***. ALFA is a 3-year EU-funded project (2022–2025) that piloted across six EU countries: Belgium, Denmark, Italy, Slovakia, Spain, and Greece. Through two rounds of open calls and targeted support services, the project engaged stakeholders on the ground and delivered a wide range of technical and business services tailored to local needs.

All strategies and recommendations featured in this guide have been applied and validated in real settings, with inputs gathered directly from the organisations and experts who implemented them. The aim is to enable others to build on ALFA's approach, adapting it to their own regional context and supporting a broader transition toward climate-smart agriculture and energy resilience.

Who is this guide for?

This guide is intended for authorities, innovators, various organisations (incl. agricultural associations, innovation agencies, cooperatives, and NGOs), and industry actors working in the field of renewable energy and sustainable agriculture. It is designed for those who recognise that livestock farming can play a much greater role in the clean energy transition, and who want to support farmers in unlocking the potential of biogas.

Local, regional, or national authorities: governments seeking to promote sustainable agriculture, reduce emissions from livestock, or improve waste management. The guide can support policy design, awareness initiatives, and regional project implementation.

Agricultural organisations, innovation hubs, cooperatives, or civil society groups: Trusted intermediaries who work directly with farmers and are well-positioned to explain biogas opportunities, address doubts, and facilitate early-stage exploration. Organisations supporting climate-smart agriculture or rural development can use this guide to design targeted outreach on the ALFA approach.

Industry or biogas, agri-tech, or renewable energy sector stakeholders and innovators: Businesses and service providers active in the biogas value chain can gain insight into what livestock farmers need, expect, and struggle with, allowing them to align their offer and improve engagement strategies.

EU-funded projects or initiatives: Projects interested in supporting the uptake of biogas in livestock farming will find in this guide tested strategies and practical tools adaptable to different regions and stakeholder groups.

Whether you are just beginning or seeking to scale up biogas uptake, this guide is designed to help you identify which approach suits your context, and to provide you with the tools and evidence needed to act. Each strategy is rooted in real experiences from the ALFA project and can be adapted to local realities across Europe and beyond.

Why is this guide important?

"Farms can fuel the future."

We want to accelerate the adoption of biogas solutions in livestock farming by building on direct experience from the ground. ALFA brings together expertise in bioenergy, agricultural innovation, stakeholder engagement, and policy development to support the deployment of biogas systems that are technically sound, economically viable, and socially accepted.

The need is urgent: while biogas technologies are widely available, farmers often lack the support structures to move from interest to implementation. This guide responds to that gap by showing how targeted support services, delivered through regional hubs, can help overcome common barriers, from financing and planning to trust and awareness.

There is growing consensus that multi-actor, local approaches are essential for scaling renewable energy solutions in rural areas. That's why we place emphasis on setting up Regional Hubs as a key strategy bringing together farmers, consultants, authorities, and associations to co-develop solutions that are regionally relevant, and scalable.

Biogas adoption is not just a technical or economic challenge; it's a systems challenge. It requires coordinated effort, local credibility, and a flexible support framework that reflects the specific needs of agricultural communities. This guide provides the tested strategies, methods, and insights from the ALFA project to help make that happen.

Why biogas?

Biogas is a renewable energy source that offers a unique opportunity to decarbonise agriculture, manage organic waste sustainably, and enhance energy security in rural areas. Derived primarily from livestock manure, agricultural residues, and other biodegradable materials, biogas represents a local, circular solution that addresses environmental, economic, and social challenges simultaneously.

In the context of livestock farming, biogas systems allow for the controlled breakdown of manure and other organic waste through anaerobic digestion . Upgraded biomethane can serve as a transport fuel as well as for all other applications where natural gas is currently used. The process also produces digestate, a nutrient-rich fertiliser that can replace chemical inputs and improve soil health.

At the same time, this waste represents a largely untapped energy source. Biogas technologies can transform organic residues into clean, renewable energy while producing digestate, a nutrient-rich fertiliser that supports more circular nutrient flows.

Biogas in livestock farming

The livestock sector is both a cornerstone of European agriculture and one of its most resource-intensive components. It generates substantial volumes of organic waste, primarily in the form of manure, which if not managed properly, leads to significant greenhouse gas emissions, and contributes to environmental issues such as nitrate pollution and odour.

"A smart, scalable energy solution."

Moreover, integrating biogas into farm operations can offer multiple co-benefits: **improved nutrient management**, **energy cost savings**, **diversification of farm income**, and **new employment opportunities** in rural areas. Still, despite these benefits and the technical maturity of biogas solutions, adoption remains limited, mainly due to regulatory complexity, financial uncertainty, and knowledge gaps.

There is growing consensus across the EU that decarbonising agriculture is central to achieving the Green Deal targets and meeting national climate obligations. Biogas, as a flexible and storable energy source, can play a key role in this transformation, yet the sector remains underdeveloped.

[1] Jameel, Mohammed Khaleel, Mohammed Ahmed Mustafa, Hassan Safi Ahmed, et al. 2024. "Biogas: Production, Properties, Applications, Economic and Challenges: A Review." *Results in Chemistry* 7 (January): 101549. https://doi.org/10.1016/j.rechem.2024.101549.

Why biogas?

Powering rural growth

Biogas can support rural economies by:

- Helping farmers diversify income streams and stabilise energy costs.
- Creating local employment in construction, maintenance, and advisory services.
- Encouraging cooperation among farms, particularly where economies of scale can be achieved through collective projects.

Despite these benefits, biogas remains underused in the agricultural sector. Farmers often face regulatory complexity, financial barriers, limited technical capacity, and public resistance. ALFA was developed to respond to these gaps by providing free, tailored support services, stakeholder engagement, and policy guidance that help move biogas projects from concept to action.

Biogas in livestock farming is not a silver bullet, but a proven, scalable solution that aligns environmental sustainability with economic viability, especially when implemented with the right support structures. This guide builds on ALFA's experience to help others harness that potential in new contexts.

We want to accelerate the adoption of biogas solutions in livestock farming by building on direct experience from the ground. The need is urgent: while biogas technologies are widely available, farmers often lack the support structures to move from interest to implementation. This guide responds to that gap by showing how targeted support services, delivered through regional hubs, can help overcome common barriers, from financing and planning to trust and awareness.

Did you know?[2]

A key advantage of adopting biogas systems in livestock farming is the flexibility they offer in using and monetising the energy produced. The choice of valorisation pathway depends on the size and type of the installation, the availability of local infrastructure, and the regulatory framework in place. Below are the main options identified through ALFA's work.

Self-consumption: Farmers can use the electricity and heat directly on site for milking systems, heating, or feed drying. This avoids grid costs and provides savings through reduced energy bills.

Combined heat and power with local heat use: CHP units can supply both electricity and useful heat to farm buildings, greenhouses, or local networks, increasing efficiency and offering visible benefits to the community.

Selling electricity to the grid: Some installations can sell surplus electricity via grid connections, though this is less attractive today due to reduced tariffs and administrative requirements.

Upgrading biogas to biomethane: Larger plants can upgrade biogas into biomethane for grid injection or local use as CNG/LNG. This requires higher investment but opens new market opportunities.

Providing grid support services: CHP units can offer flexibility services like frequency regulation or peak shaving, creating additional revenue as energy markets value dispatchable renewables.

CO_2 capture and utilisation: CO_2 from upgrading can be captured and sold for industrial or food-grade uses, adding income and supporting circular carbon practices.

[2] Info for this section were taken from:
i) Lukehurst, Clare T., and Angela Bywater. 2015. Exploring the Viability of Small Scale Anaerobic Digesters in Livestock Farming. IEA Bioenergy Task 37. Available here.
ii) McCabe, Brendan K., Jerry D. Murphy, David Styles, et al. 2020. Integration of Anaerobic Digestion into Farming Systems. IEA Bioenergy. Available here.

ALFA Platforms

7

ALFA Platforms | The Regional Hubs

The ALFA Hubs

Overview

Italy has a well-developed biogas sector with favorable regulation for biomethane and strong livestock production. However, there are gaps in technical expertise among biomass producers.

Denmark is a leader in biogas technology and sees potential for significant job creation. Yet, a lack of new plant subsidies and limited financial incentives challenge further growth.

Belgium benefits from abundant animal manure and a high share of natural gas use but faces insufficient subsidy systems and low confidence in the banking sector, limiting expansion.

Slovakia's biomass makes up the largest share of RES, with manure as a key source. Challenges include low awareness of waste separation, high transport costs, and grid connection limits.

Greece has huge raw potential and favorable competition conditions but struggles with low social acceptance of biogas and a lack of a reliable supply chain.

Spain offers large potential thanks to its extensive gas network and strong livestock sector, but unstable regulatory frameworks and lacks support scheme.

ALFA Fact

To inspire and guide other regions, ALFA deliberately involved Denmark and Italy, two of the most advanced biogas markets in Europe. Showcasing their regulatory frameworks, technological know-how, and mature market practices helped illustrate what is achievable and provided practical reference points for hubs in less developed contexts.

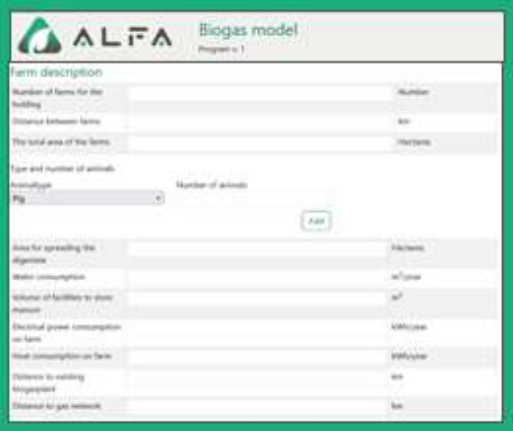
8

ALFA Tools and Services

The ALFA project has developed a range of digital tools to support the uptake of biogas in livestock farming, hosted on the project's **Engagement Platform**. These resources include i) a Decision Support Tool, ii) an **Atlas Map** of biogas cases, iii) a **Knowledge Centre** introducing a series of webinars, iv) and a **Biogas Forum**. Designed to promote informed decision-making and cross-border learning, these tools are freely available to all interested users.

Decision Support Tool

The ALFA Decision Support Tool is an interactive online calculator that allows livestock farmers to estimate the biogas production potential of their farm. By entering basic data, such as the number and type of animals, land use, or waste streams, users receive tailored insights on the technical feasibility, economic viability, and environmental impact of adopting biogas. This tool supports early-stage planning and informed decision-making.



ALFA DST Tool

The DST currently provides calculations based on four main categories of biomass: livestock manure, crops, residual products, and industrial by-products. Users can refine default values with their own data if they have more accurate information. This flexibility allows for more tailored and credible outputs, while supporting a better understanding of what feedstocks are most promising for biogas production.

One of the DST's key strengths is its ability to integrate farm-specific details. In future updates, the tool will include country-specific cost structures for construction and operation, alongside financial projections that account for national frameworks and incentives. This will enable farmers to assess not only technical potential but also economic feasibility.

Beyond calculations, the DST also contributes to environmental awareness by outlining the potential greenhouse gas savings and other sustainability benefits of biogas adoption. As development continues, the tool will remain a central element of ALFA's support package, empowering stakeholders with evidence-based insights to make informed investment and operational decisions.

ALFA Platforms | Biogas Forum

Biogas Forum

The Biogas Forum provides a dedicated digital space for dialogue and knowledge exchange. Open to farmers, advisors, researchers, and project partners, it enables users to ask questions, share experiences, and connect across countries. The forum helps strengthen peer-to-peer learning and encourages collaborative problem-solving in the biogas field.

ALFA Biogas Forum

One of the Forum's key strengths is its peer-to-peer learning environment. Farmers can share insights from their own operations, advisors can provide clarifications on technical or regulatory matters, and experts can highlight best practices from different regions. This dynamic exchange helps to build confidence in biogas solutions and offers a channel for immediate, practical advice beyond formal project services.

The Forum also plays an important role in fostering a sense of community around biogas adoption. By bringing together diverse actors from across countries and sectors, it encourages collaboration, sparks new ideas, and helps overcome the isolation that many individual farmers or small cooperatives might feel when exploring renewable energy solutions on their own.

Ultimately, the Biogas Forum is more than a discussion board, it is a living knowledge network that complements ALFA's support services and tools. By actively participating in the Forum, users can stay informed, learn from real cases, and build valuable connections that support the successful uptake of biogas in the livestock sector.

ALFA Fact

Beyond knowledge-sharing between experts, the Forum also enables access to over 40 detailed reports on biogas adoption in livestock farming, covering technical options, regulatory insights, and practical lessons learned. This rich library of resources makes it a powerful tool for anyone looking to uptake biogas technologies.

ALFA Tools and Services | Atlas Map

Atlas Map

For farmers and advisors, the Atlas Map serves as a source of inspiration and reassurance. Seeing concrete examples of operational plants, often from farms with similar size, feedstocks, or regional conditions, helps prove that biogas is not just a theoretical option but a proven, practical solution.

The Atlas Map also supports cross-border learning. Users can compare approaches from different countries, identify trends, and draw ideas for their own projects, whether related to technology choices, business models, or community engagement. This makes it a valuable complement to ALFA's technical and business support services.

Overall, the Biogas Cases Atlas Map is designed to help users move from interest to action by providing real examples of success. It shows that the transition to biogas is achievable, offering both environmental and economic benefits, and encourages stakeholders to take the next steps with confidence.

The Atlas Map on the ALFA Engagement Platform is a visual database of real-world biogas installations implemented by livestock farms across Europe. Each entry on the map highlights key information about a specific case, such as the type of biomass used, the scale of the installation, and the main outcomes achieved. By presenting these cases in an accessible, geographic format, the Atlas Map allows users to explore how biogas has been successfully adopted in different contexts.

ATLAS Map

Knowledge Center

The Knowledge Center is a dedicated section of the ALFA Engagement Platform designed to collect and share resources on livestock biogas. It brings together a variety of materials created and curated by the project, making them accessible to farmers, advisors, policymakers, and other interested stakeholders. Its purpose is to provide reliable, up-to-date information that supports learning and informed decision-making.

ALFA Knowledge Center

Within the Knowledge Center, users can find presentations, factsheets, recorded webinars, and guidance documents covering technical, economic, and environmental aspects of biogas production. These resources are developed and regularly updated by ALFA partners to ensure they reflect the most relevant findings, regulatory contexts, and practical advice gathered during the project.

An important feature of the Knowledge Center is that it is open and free to use, removing barriers to information for stakeholders who may not be directly involved in the project. By centralising materials in one location, it simplifies access to knowledge that would otherwise be scattered across different organisations and countries.

11

Project's website

The project's website served as the main entry point to the project's resources, providing a single, easy-to-navigate platform where all tools, findings, and updates are brought together. Designed with practitioners and decision-makers in mind, it offers clear pathways to explore services, discover practical guidance, and access project's tools and materials.

Through the website, users can reach the Engagement Platform, which hosts interactive elements such as the Decision Support Tool, the Atlas Map of biogas cases, the Technology Catalogue, the Knowledge Center, and the Biogas Forum. Each of these resources is directly accessible and supported by explanatory material, making it straightforward for farmers, advisors, and regional authorities to understand how to apply them in practice.

Beyond tools, the website also showcases project updates, reports, and events, helping stakeholders stay informed about the latest developments in ALFA. It acts not only as a repository of knowledge but also as a living interface between the project and the wider community, ensuring that the insights and solutions developed through ALFA remain available and actionable long after the project's lifetime.

ALFA's Website

ALFA Links

Website: www.alfa-res.eu

Engagement Platform: www.alfaep.eu

Decision Support Tool: www.alfaep.eu/dst

Atlas Map: www.alfaep.eu/biogas-cases

Biogas Forum: www.alfaep.eu/community/biogas-forum

Knowledge Center: www.alfaep.eu/knowledge-center

ALFA's Support Services

A central pillar of the ALFA approach was the development and delivery of a suite of targeted support services designed to help farmers and regional actors overcome practical barriers to adopting biogas. Rather than offering generic advice, ALFA focused on hands-on assistance that responded directly to the needs identified in each region. These services combined business, technical, and operational expertise to guide beneficiaries from early planning through to viable project concepts.

The following sections outline the main services made available through ALFA. Each was tested and refined through two rounds of implementation, ensuring that they are not only effective but also adaptable to different contexts. Together, they provide a replicable model for regions seeking to build capacity, reduce risks, and unlock the potential of livestock biogas solutions.

Business and Financial Support Services

Name of the service	Description
Market Research	Market analysis following: 1) Identification of target market, 2) analysis of external environment (PESTLE), 3) market overview (quantification, trends, competitive analysis) and 4) market attractiveness (Porter's 5 forces).
Business modelling and Planning	Development of innovative business models tailored to the participant's needs and specificities (for the energy and the digestate), based on the Business Model Canvas methodology.
Access to finance support	Identification of European, regional and national financing opportunities to implement biogas technologies in livestock farming, with step-by-step directions on how to secure it.
Corporate and sustainable finance	Assessment of the profitability of the potential investment made to implement/ improve a biogas system (IRR, ROI, NPV, CapEx, OpEx, etc.).
Farmer / Expert to farmer advice	Farmer to farmer advice on planning a biogas project. Experienced farmers share their expertise and experiences in planning and constructing a biogas plants.

Technical Support Services

Name of the service	Description
Concept design and development of biogas systems	Technical feasibility assessment for planned biogas installations, with tailored equipment recommendations based on each facility's needs and capacity.
Evaluation of biogas potential based on preliminary calculations	Preliminary estimate of each livestock unit's biogas potential based on available biomass sources, and identification of the most suitable utilization pathway for the produced biogas.
Environmental analyses assessing the energy & carbon footprint across the life cycle	Evaluation of the environmental performance of biogas/biomethane plants, and detection of environmental hotspots enabling targeted optimization or sustainable substitution.
Consultancy on the implementation and monitoring of biogas solutions	Holistic guidance on technology and component selection, along with optimal feedstock compositions to maximize biogas yield, and a detailed catalogue of relevant equipment options.
Technical support in the evaluation & comparison of plant suppliers' quotes	Assessment of each quote's strengths and weaknesses to support effective decision-making, and validation of supplier offers with advisory support on infrastructure and operational planning.
Technology catalogue: Features of cleaning and upgrading equipment	Detailed report on available upgrading technologies for stakeholders looking to transition to biomethane production, and purification techniques to mitigate impurities in the final biomethane stream.
Need-specific technical support	Technical services developed to specifically address stakeholder needs (outside of ALFA's scope), provided when the request was within the project's and service provider's capabilities.

ALFA Fact

After evaluating the results of the first round of service delivery, two additional technical services were introduced: i) Technology catalogue and ii) Need-specific technical support. The Technology Catalogue offered stakeholders a structured overview of available biogas cleaning and upgrading technologies, helping them to better understand and assess suitable equipment options for their projects. Joint technical support allowed for more flexible and detailed services, and service providers effectively managed requests beyond ALFA's scope when these were within the project's and service provider's capabilities.

ALFA in Action: Tools, Methods and Activities

15

The Regional Hubs

Goal

Biogas markets across Europe are highly diverse, shaped by national energy policies, regional agricultural practices, and varying levels of awareness and technical capacity. As such, unlocking the potential of biogas in livestock farming requires a localised and adaptive approach, not a uniform model.

To effectively address region-specific challenges and opportunities, the ALFA project recommends the creation and coordination of Regional Hubs. These hubs serve as locally embedded facilitators, bringing together actors from across the quadruple helix, public authorities, business, academia, and civil society, to co-develop and deliver solutions tailored to the agricultural sector.

The main purpose of the Regional Hubs is to:

- Connect local stakeholders with the information, services, and partners they need to move biogas projects forward;
- Provide hands-on, place-based support that reflects the local regulatory and market environment;
- Act as coordination points for delivering ALFA's support services, from technical advice to awareness raising;
- Facilitate matchmaking between supply and demand actors within the biogas ecosystem;
- Build trust, especially in regions where previous public-private initiatives have left farmers skeptical of external support.

Method

The primary task of each ALFA Hub was to assess and respond to the specific needs, barriers, and opportunities in their national and regional biogas landscape. Each Hub in ALFA was coordinated by a national project partner with a strong understanding of the local agricultural and energy landscape. While the specific structure and priorities varied by country, all hubs shared the goal of connecting actors, identifying promising initiatives, and delivering tailored support to foster the adoption of biogas technologies in livestock farming.

The Hubs began by conducting stakeholder mapping and outreach, identifying key players across the biogas value chain, including farmers, cooperatives, local authorities, technology providers, consultants, financial bodies, and associations.

Building on these relationships, the Hubs engaged with stakeholders to:

- Assess regional needs, barriers, and opportunities related to biogas uptake;
- Identify farms or initiatives that could benefit from ALFA support services;
- Match project beneficiaries with the right expertise within the consortium to deliver customised assistance;
- Organise events and capacity-building activities that responded to local knowledge gaps and interests;
- Promote the use of the ALFA Engagement Platform to expand access to tools, knowledge, and partnerships;
- Gather insights and feedback to inform replication guidance and policy recommendations.

Our Hubs also played a central role in:

- Launching and managing national Open Calls to select cases for support;
- Facilitating trust-building, especially in regions where farmers had limited experience with EU projects or free consultancy services;
- Creating visibility for biogas through regional seminars, webinars awareness raising activities and site visits.

ALFA Facts

- Personalised and direct engagement was more effective than mass outreach, particularly in regions where stakeholders were unfamiliar with EU-funded support schemes.
- Farmers often showed interest in biogas, but lacked access to impartial guidance or trusted intermediaries to help move from idea to action.
- In several countries, the hubs noted that stakeholders were initially cautious about "free" services. The role of the Hub manager is essential in building trust, translating needs, and ensuring that support services are relevant and well-delivered.
- National-level differences in regulatory frameworks, permitting complexity, and market maturity strongly influenced the speed and nature of engagement. As a result, hubs had to adapt their communication and support strategies accordingly.
- Cross-country exchange and peer learning between hubs enabled partners to compare outreach tactics, service formats, and stakeholder responses, helping them refine the project's services and all other hub actions.

Co-creation Workshops

Goal

The co-creation workshops in ALFA were designed to actively involve local stakeholders in shaping meaningful, region-specific support for biogas uptake in livestock farming. Their primary aim was to bring together farmers, cooperatives, technology providers, agricultural advisors, and policy actors to jointly identify barriers, opportunities, needs and practical measures. The workshops created a structured setting where the views of these stakeholders could be shared and compared. The intent was not only to collect data but to enable stakeholders to shape the support measures they would later benefit from.

Rather than imposing a top-down model, these sessions sought to harness local knowledge and lived experience, ensuring that proposed solutions reflected real-world conditions in each hub's region. By fostering dialogue among different actors, the workshops also helped build trust and a sense of ownership, which are essential for the long-term success of biogas initiatives. By inviting stakeholders to contribute from the outset, ALFA fostered a sense of shared purpose and created stronger relationships that would support later phases of the project, including the Open Calls, awareness campaigns, and capacity building activities.

Another important goal was to validate and refine ALFA's preliminary findings. Prior to the workshops, each hub had already carried out desk research on local biogas conditions using a small sample of expert interviews and a wider survey. The co-creation sessions allowed partners to check those findings directly with value chain actors, ensuring the project's assumptions aligned with on-the-ground realities. This iterative process helped prevent missteps and increased the relevance of the planned activities.

Method

In ALFA, co-creation workshops were organised in each Regional Hub as a first step to shape the support services and awareness actions. These sessions brought together key stakeholders, including farmers, advisors, local authorities, and technology providers, to openly discuss the current situation of biogas in livestock farming.

Overall, the co-creation workshops were designed following a structured approach developed by the partner leading the co-creation activities task, who prepared a dedicated set of guidelines, templates, and facilitation materials. These resources ensured consistency across hubs while allowing space for local adaptation. The materials included agendas, moderation tips, and templates for reporting key outcomes, enabling each hub to implement the sessions effectively and comparably. Finally, all hubs used a common reporting template to synthesise findings, which were shared back with the lead partner. This allowed for a structured analysis of recurring needs and gaps, feeding directly into the refinement of ALFA's tools and services.

Each hub organised one co-creation workshop with carefully selected participants (incl., public authorities, industry actors, academia, and civil society). Sessions typically combined presentations of preliminary findings with moderated discussions and break-out groups to explore topics such as technical challenges, financing obstacles, and local policy gaps. Participants were encouraged to share practical experiences and to comment on early drafts of services and tools. Notes and feedback were systematically collected and synthesised by the responsible partners to refine the project's support portfolio.

When possible, workshops were held in local languages to ensure accessibility, and facilitators used structured agendas to keep sessions focused while still allowing open discussion. The workshops also differed in format, with some conducted online and others held in person.

During the sessions, participants identified region-specific challenges, strengths and needs, and also shared what would make a difference for them. Each hub documented the inputs collected and used them to adjust the design of services and awareness-raising materials, ensuring that the final offer was relevant, practical, and grounded in real needs

Example photos from the co-creation workshop in the Danish ALFA Hub

ALFA Fact

One of the key lessons from ALFA's co-creation workshops was the importance of early stakeholder involvement. Participants felt more invested in the project's direction when their local realities were acknowledged and addressed. These early conversations also uncovered practical challenges, like knowledge gaps and market barriers, that helped fine-tune the design of the support services provided.

Business, Financial, and Technical Services

Goal

The goal of providing Technical and Business Support Services in ALFA was to support, accelerate, and de-risk the adoption of biogas technologies in the livestock sector. By offering tailored, high-quality support to farmers, cooperatives, and other stakeholders, our strategy aimed to overcome common barriers that delay or prevent the uptake of biogas technologies (e.g., lack of technical knowledge and regulatory clarity, uncertainty about financial viability, etc.).

- Recognising the need for tailored expertise, ALFA services were divided into 1) Technical, 2) Business/Financial, and 3) Capacity-building. Overall, our services were designed to:
- Reduce the time and effort needed to develop a biogas project;
- Improve the quality and feasibility of project concepts;
- Empower actors to make informed decisions based on expert input;
- Increase trust in the technologies and the process, especially in contexts where institutional or private support has been fragmented.

By combining technical, business, and capacity-building expertise, ALFA laid a solid foundation for more confident, faster, and better-informed biogas project development.

Method

Phase 1: Setup and design of services

ALFA partners undertook a coordinated effort to define the methodology, scope, and operational framework of the support services, including:

- Developing a tailored methodology for delivering technical and business support to livestock farmers interested in biogas projects, with attention to the diversity of regional contexts;
- Identifying needs and barriers specific to each country, informed by previous experience, market knowledge, and early stakeholder engagement;
- Creating a structured approach for case selection, including eligibility criteria, evaluation templates, and a common set of support themes;
- Designing tools and materials to ensure consistency and quality in service delivery across all Regional Hubs.

Before launching the Open Call, it is essential to prepare a Terms of Reference (ToR) document. This outlines all relevant information that applicants need in order to make an informed decision about participating. The ToR should clearly describe the types of support services offered, the eligibility and selection criteria, the application process, and the expected timeline.

Phase 2: Delivery of services

Once the methodology was in place, services were delivered in a phased and personalised manner through the ALFA Hubs. The process included:

- **Step 1 - Beneficiary application: Applications** were conducted via Open Calls. Selected stakeholders were typically livestock farmers, cooperatives, or early-stage biogas project developers.
- **Step 2 - Evaluation and selection:** Applicants were first assessed based on a set of criteria, including:

  - **Profitability** (weight 15%): Assessment of the potential for financial viability and profitability.

  - **Replication potential** (weight 15%): Evaluation of the project's scalability and potential for successful replication, in terms of consulting or advising similar projects.

  - **Innovation potential** (weight 15%): Analysis of the degree of innovation inherent in the project, encompassing the use or development of innovative products, systems, processes, or solutions.

  - **Environmental benefits** (weight 15%): Examination of positive environmental impacts and sustainability considerations, e.g. the use of sustainable technologies and the reduction of greenhouse gas emissions.

  - **Women engagement** (weight 15%): Consideration of the level of engagement of women in the project, including female leadership, engagement levels of women, and gender-related considerations.

  - **Geographical engagement** (weight 15%): Assessment of the project's location across ALFA regions. In total and during the two rounds of the open call a number of projects / cases should be supported in all ALFA regions.

  - **Clear need for support** (weight 10%): Identification of a demonstrable and clear need for the support offered by ALFA.

You can apply these criteria using a selection matrix, where you rate candidate projects on a 6-point scale from 0 to 5: 0 indicates "non-eligible", 1 represents "poor", 2 indicates "weak", 3 denotes "fair", 4 implies "good", and 5 signifies "excellent". Projects with the highest aggregated scores will be selected for support services.

- **Step 3 - Needs assessment:** A dedicated needs analysis session was held with each selected beneficiary, during which a structured questionnaire was completed in collaboration with the responsible ALFA partner. This ensured prioritizing the available services based on the specific requirements and challenges of each project.

The information required included:

- **Project information & Overview** (Title, Organisation/Individual name, Region of operation, Primary contact info, Project description)
- **Technical support needs:** 1) What specific technical challenges or requirements does your project currently face?, 2) Are there any specific areas within the biogas or livestock sector where you seek technical expertise or guidance?, and 3) Please outline any existing technical infrastructure or systems related to your project.
- **Business support needs:** 1) What are the primary business challenges or needs for your project?, 2) Do you require assistance in business planning, market analysis, or financial management? If so, please specify., 3) Have you identified any potential barriers to the market uptake of renewable energy solutions in the livestock sector within your region?
- **Investment readiness:** How prepared is your project for investment in renewable energy solutions for the livestock sector? Please provide information on the current level of readiness, including financial planning, funding sources, and any existing partnerships or collaborations in place.
- **Service prioritisation:** Please prioritize the following ALFA services based on your project's current needs. Use numbers (1 being the highest priority, 5 being the lowest) to indicate the importance of each service.
- **General project information:** 1) What are the expected outcomes or goals for your project within the next 6-12 months?, 2) Are there any specific milestones or deadlines that we should be aware of in the coming months?, 3) How do you envision the ALFA project supporting the market uptake of renewable energy solutions in the livestock sector through your initiative?, and 4) Is there any other information or specific support you would like to highlight or discuss regarding your project?

ALFA Tip

It is important to clearly communicate from the beginning that **each beneficiary is eligible for one tailored support service that may however include more than one standard service (joint-services)**, and that **services are offered free of charge within predefined time and resource limits**. Overall, we recommend the following approach:

- Align on objectives and expectations early, ensuring that both the beneficiary and the ALFA partner share a clear understanding of what the support will address.
- Define the scope of the service transparently, to manage expectations and avoid misunderstandings, including to explain what the service covers, its duration, and any limitations.
- Allocate sufficient time for the first discussion, particularly for technical support cases that may require the beneficiary to provide detailed data about their farm operations, waste flows, or existing infrastructure.
- Make sure that all services integrate both technical and business support, as the two are often interdependent.

- **Step 4 – Development of the Service Action Plan:** Once a beneficiary was selected, the Hub manager initiated the support process through a dedicated meeting to assess the project's needs and identify the most suitable type of assistance. Based on this exchange, the coordinator matched the beneficiary with the appropriate expert and co-developed a Service Action Plan, outlining the scope of the service, timeline, and responsibilities. The following steps were followed and are recommended as good practice:
  - Define a clear plan for service delivery (who provides what, when, and how). **This is particularly important in cases where more than one project partners should deliver a service/set of services**.
  - **Maintain regular contact with the beneficiary** throughout the process.
- **Step 5 - Service delivery:** Once the Service Action Plan was in place, services were delivered through a mix of consultations, site visits, and document-based support, ensuring that cases received practical, hands-on assistance.

Phase 3: Follow-up and feedback

After the support, make sure to follow-up and receive feedback. In ALFA, we used a dedicated questionnaire addressing key aspects of the service delivery, and this feedback was also used to refine future service provision. Aspects included:

- What services did you receive?
- To what extent did the service meet your expectations?
- What is the expected power output of your biogas system, measured in kilowatts (kWe)? Please refer to the provided service report for the specific details.
- To what extent has your comfort level in investing in biogas changed compared to before, indicating a perceived reduction in risk?
- To what extent did our services contribute to the efficiency (in terms of time and effort) of realizing your future project?
- Are you planning to proceed with your project within the next 5 years?
- How would you evaluate the application process?
- Where did you find information about our service provision and open calls?
- What could be improved?

ALFA Tip

In ALFA, services were designed to guide decision-making, rather than just deliver standard advice, achieved significantly higher stakeholder engagement, showing that tailored, context-specific support motivates farmers far more than generic technical assistance.

Awareness-raising Activities

Goal

The goal of employing awareness raising activities was to increase awareness and understanding of biogas technologies among key stakeholders, particularly in the agricultural sector, and to build the foundational knowledge needed to support informed decision-making and long-term uptake.

In ALFA, awareness raising activities focused on addressing knowledge gaps, correcting misconceptions, and providing accessible, relevant information to farmers, cooperatives, rural advisors, and local authorities. These efforts helped stakeholders understand not only the environmental and economic benefits of biogas, but also the practical steps needed to initiate or support a biogas project.

Because many target groups were unfamiliar with biogas solutions or skeptical due to past experiences, the strategy prioritised clear communication, trusted messengers, and regionally adapted content. In some cases, awareness raising was integrated directly into the delivery of support services; in others, it took the form of workshops, info sessions, or thematic events organised at local or national levels.

This strategy also aimed to strengthen the overall enabling environment by promoting a basic level of literacy around biogas technologies, regulatory frameworks, and market opportunities, ensuring that potential adopters and supporters were equipped to move from interest to action.

Method

The ALFA awareness raising activities were conceptualised and coordinated by the project's Task Leader and implemented by the six ALFA Hubs through a decentralised approach, ensuring alignment with project goals while allowing each Hub to adapt the campaign to its regional context, knowledge level, and barriers. The ARC had a dual objective: (i) informing and empowering livestock farmers and local stakeholders, and (ii) fostering broader societal and policy acceptance of biogas.

The campaigns were implemented in two distinct rounds. Feedback from the first round, on timing, messaging clarity, and channel effectiveness, was systematically collected and used to refine the second round, ensuring improved focus and greater outreach.

The lead partner prepared a detailed guidance package covering objectives, messaging, tone, recommended channels, and outreach methods. Each hub adapted the key messages of the campaign to its national context, ensuring that the messaging was evidence-based and regionally relevant.

Specifically, the key messages promoted in each campaign directly addressed local misconceptions, knowledge gaps, or hesitation identified earlier in the project. For example, the Hubs highlighted the role of women in agriculture, biogas, renewable energy, and research through interviews and personal stories, including those of women who directly benefited from ALFA services and are now implementing biogas solutions on their farms. This allowed the communication to go beyond general promotion and instead speak directly to the concerns of target groups, particularly livestock farmers, cooperatives, and other key stakeholders.

In ALFA, awareness-raising was not limited to social media. Hubs leveraged external events, promotional material, newsletters, and direct communication tools (including WhatsApp and email lists) to reach hard-to-engage stakeholders.

ALFA Fact

Through two rounds of coordinated awareness-raising campaigns, ALFA reached tens of thousands of stakeholders across Europe. By tailoring messages to national contexts and addressing local misconceptions, hubs achieved measurable impact, such as a documented increase of citizen acceptance of biogas socio-economic benefits by 42.22%, environmental benefits by 15.74%, and inclusive, sustainable agriculture by 35.88%.

Capacity-building Activities

Goal

The capacity-building activities in ALFA were designed to equip key stakeholders with the practical knowledge and confidence needed to explore and implement biogas solutions. Beyond simply sharing information, these activities aimed to close critical knowledge gaps, address misconceptions, and support stakeholders in understanding both the opportunities and the challenges of biogas adoption in livestock farming.

A key goal was to create an environment where learning was not one-way, but interactive and contextualised. Through seminars, webinars, and hands-on workshops, participants could exchange ideas, ask questions, and discuss real-world examples relevant to their region. By tailoring content to the audience, whether local or international, the activities ensured that participants could see how biogas technologies could fit into their own operational realities.

Ultimately, the capacity-building programme sought to build long-term capability within the sector. Rather than providing one-off information, ALFA's approach focused on fostering networks, encouraging collaboration, and enabling participants to act as multipliers of knowledge within their communities. This way, the impact of each session extended beyond the event itself, supporting wider awareness, stronger project concepts, and a more resilient biogas ecosystem.

Method

Capacity building in ALFA was designed to equip farmers, cooperatives, and rural stakeholders with the knowledge and tools needed to explore and develop biogas projects. These efforts were tailored to local contexts and varied in format and content across countries, but shared a common aim: to strengthen stakeholders' technical and strategic understanding of biogas potential within livestock farming.

The task leader guided the overall design and coordination of these activities, ensuring consistency and quality. Each Hub organised and hosted the seminars at the local level, bringing in relevant stakeholders. Additionally, partners with technical expertise contributed presentations and case studies, enriching the content with specialised knowledge and practical examples.

The delivery approach included:

- **Seminars**, organised at national and regional levels, which introduced core concepts such as biogas technology, project development steps, policy frameworks, and financing options.
- **Webinars,** enabling cross-country participation and knowledge exchange. Webinars were structured to cover broader insights and shared learnings from the different Hubs, allowing participants to benefit from experiences beyond their own local context.
- Interactive **training sessions and workshops**, designed to be practical and participatory, with space for questions, discussion, and experience sharing among peers.
- **Educational materials**, including factsheets, toolkits, and checklists, used to support learning and provide follow-up reference for participants.

ALFA Tips

1. **Focus on impact:** Participants expressed a strong preference for sessions that go beyond method descriptions to emphasize results, impacts, and real-world implications. Future activities should present concrete examples and case studies to clearly demonstrate how biogas solutions deliver value.
2. **Boost interactivity:** Engagement rises significantly when sessions include interactive elements, such as live polls, quizzes, and Q&A segments. These tools help participants remain active throughout and encourage knowledge exchange rather than one-way communication.
3. **Promote Inclusivity and accessibility:** Content should be relevant and accessible to diverse audiences.. Clear language, captioning, and culturally adapted examples were identified as key to making sessions easier to follow and more meaningful for all participants.
4. **Manage time effectively:** Allocating more time for questions, discussions, and audience interaction increases value and satisfaction. This also ensures that participants can clarify technical details or regulatory aspects that are directly relevant to them.
5. **Increase participation and broaden content:** Try to expand outreach efforts and bring in more diverse voices and incorporate more technical/practical content on topics such as biomethane, biochar, and the quality of degassed biomass, as well as regular updates on legislative and policy developments.

Mutual Learning Workshops and Site Visits

Goal

The mutual learning workshops and site-visits in ALFA were designed to foster collaboration and knowledge exchange, enabling farmers, biogas owners / managers, policy makers and authorities, investors, project partners etc. to learn from each other's experiences. The key aim was not only to disseminate knowledge about biogas from livestock manure but also to listen, learn and adapt to the realities, challenges, and opportunities observed at the local level. While these workshops did not constitute an official component of the project's capacity-building activities, they played a major role in aligning ALFA's services with real-world needs and fostering cross-country learning.

By gathering stakeholders from different hubs, sectors, and backgrounds, the workshops sought to build a shared understanding of technical, financial, and policy-related barriers and success factors. They served as interactive platforms to refine strategies for design, implementation, monitoring, progress evaluation, replication, and policy outreach, ensuring that the project's outcomes remained grounded in local knowledge and practical realities.

The biogas field visits were particularly impactful allowing selected stakeholders from other regions to experience local solutions first-hand and support cross-regional learning. Site visits enabled hands-on exposure to operational systems, helped build trust between actors, and served as a practical validation of the lessons shared during discussions. Combined, the workshops and site visits contributed to building a shared knowledge base while tailoring learning to national and local realities.

Method

The mutual learning process was implemented through a dedicated series of four workshops and biogas deployment site visits across some of the hubs. The topics of the MLWs were tailored by each ALFA Hub to reflect national contexts and sectoral realities, ensuring relevance for local stakeholders while supporting broader European knowledge exchange."

By aligning the workshops with regional priorities, the ALFA project effectively fostered meaningful dialogue and peer learning among a diverse set of stakeholders across Europe.

The workshops were organised after the first round of services delivery to provide a structured opportunity for partners to present their experiences, discuss challenges, and provide feedback on the tools and methods used. An important component of this process was the involvement of beneficiaries from the first round of support services. Their direct participation brought grounded, real-life perspectives into the learning loop, enriching the dialogue with practical insights from those who had experienced the ALFA services firsthand. This strengthened the project's responsiveness to user needs and enabled the co-identification of areas for improvement and refinement in the second round of delivery.

The purpose of the site visits was to offer practical exposure to established biogas cases and operational realities, enabling in-depth observation of technologies, value chain collaborations, and farmer engagement models. The field visits were embedded into the mutual learning process to ensure alignment between operational insights and strategic lessons.

ALFA Fact

Across Slovakia, Italy, Spain, and Denmark, workshops examined critical aspects of biogas development. Discussions ranged from identifying new revenue streams and shaping supportive policy frameworks to learning from successful EU initiatives and advancing next-generation production and upgrading technologies.

Examples of site visits

- **Denmark:** Frisjenborg Biogas & Aarhus University biogas plant
- **Italy:** Caseificio Formaggi Boccea
- **Spain:** CycleO Biogas Plant
- **Slovakia:** Biogas plant Poprad-Matejovce

Site visit in Italy

Site visit in Slovakia

Monitoring & Evaluation Framework

Goal

The Monitoring and Evaluation (M&E) framework in ALFA was designed to ensure that every action, service, and tool delivered under the project was both effective and accountable. Its primary goal was to track progress against the project's objectives, identify what worked well, and highlight areas needing improvement. By establishing clear indicators and regularly collecting data, the framework enabled hubs and partners to make informed decisions rather than relying on assumptions. This systematic approach helped safeguard the relevance and quality of support provided to farmers and regional stakeholders.

Monitoring was not limited to counting outputs, such as the number of beneficiaries reached or events held. It also involved gathering qualitative feedback from participants, service providers, and local partners to understand how support measures were received and what barriers remained. This feedback loop allowed hubs to refine their outreach, adjust service delivery methods, and improve communication materials between the first and second rounds of implementation. In this way, the M&E framework became a practical tool for continuous improvement rather than a purely reporting exercise.

Finally, the framework aimed to generate evidence for replication and policy input. By documenting challenges, successes, and context-specific insights, ALFA created a knowledge base that informs future projects and policy recommendations. Lessons on timing, language accessibility, engagement strategies, and service design were captured and transformed into guidance that others can use to replicate or scale up similar initiatives.

Method

The Monitoring and Evaluation framework in ALFA followed an iterative process to ensure continuous improvement of all measures. It began with a first round of delivery, where services, awareness campaigns, and capacity building activities (such as seminars and webinars) were rolled out to selected beneficiaries across the Regional Hubs. Immediately after these activities, anonymous feedback was collected through structured online forms to evaluate the measures from the perspective of participants and service providers.

The collected feedback was carefully analysed to identify what worked well and where adjustments were needed. Based on this analysis, the measures were refined and fine-tuned, for example, by improving timing, clarifying content, or adapting materials to better match local needs. These improved measures were then implemented in a second round of delivery, again accompanied by systematic feedback collection to monitor results and capture further insights.

Throughout both rounds, specific indicators (KPIs) were tracked. For business and technical services, this included the number of services delivered, perceived risk reduction for investments in biogas systems, projected outputs, and overall satisfaction. For capacity building activities, indicators covered the number of participants, topics covered, and knowledge gained. For awareness raising campaigns, metrics such as engagement per post, total reach, and changes in acceptance levels (e.g., over 25% increase in acceptance in some regions) were monitored. Baseline surveys at the start of activities and final feedback after each round ensured that evaluation was consistent, evidence-based, and responsive to the evolving needs of the stakeholders.

ALFA Fact

A key lesson from ALFA is the value of iterative improvement. Splitting services delivery into two rounds with feedback collection in between allowed hubs to adjust services, clarify scopes, and resolve timing issues, leading to better results in the second round. For future replication, building in these improvement cycles from the start is strongly recommended.

It is also important to combine quantitative KPIs with qualitative feedback. Tracking figures such as participation levels, perceived risk reduction, or engagement rates provides measurable impact, while open comments reveal why certain approaches worked or not.

Lastly, ALFA showed that anonymous and straightforward feedback processes encourage honest input. Sharing back how this feedback shaped improvements helps maintain trust and motivates stakeholders to stay engaged in future evaluations.

ALFA at a glance | Results and key numbers

ALFA at a glance:

Results and key numbers

32 Technical services

Countries and number & type of services:

Service / Country	TS1 Evaluation of biogas potential based on preliminary calculations	TS2 Consultancy on the implementation and monitoring of biogas solutions	TS3 Technical support in the evaluation & comparison of plant suppliers' quotes	TS4 Energy and Environmental Analyses: Assesing the Energy and Carbon Footprint across the Life Cycle
Belgium	1	1		
Spain	1	1		1
Greece	4			
Germany				
Italy	3		1	
Denmark	2			
Slovakia	2	2		

Service / Country	TS5 Concept design and development of biogas systems	TS6 Technology catalogue: Features of cleaning and upgrading equipment	Joint services	Other: Legislative requirements for digestate storage in Denmark
Belgium	1			
Spain	3	1	1: TS2, TS6	
Greece				
Germany	1			
Italy				
Denmark			i) TS5, TS6	1
Slovakia	1	1	i) TS2, TS6 ii) TS5, TS6	

21 Business services

Countries and number & type of services:

Service / Country	Market Research	Access to Finance	Corporate and Sustainable Finance	Business Modelling and Planning
Belgium	1			1
Greece			5	2
Spain		2		
Slovakia	2	2		
Denmark	1			1
Portugal	1	1		
Italy			2	

In total, ALFA delivered:

53 services across European countries, tailoring support to the specific needs of the beneficiaries.

32

Examples of supported cases

De Zwanebloem

- A dairy farm in Belgium
- 1,000 dairy cows
- 2 anaerobic digesters
- **Support service:** Consultancy on the implementation and monitoring of biogas solutions

BGP Borcova

- A facility for the recovery of biodegradable waste in Slovakia
- Biogas plant in place, using approx. 15 thousand tons of manure
- **Support service**: Concept Design and Development of Biogas Systems

Alcarrás Bioproductors

- A collaborative effort between 150 farming families in Alcarrás, Spain
- Producing compost from slurry, manure, and wood from fruit tree uprootings.
- **Support service**: Access to Finance, Consultancy on Implementation and Monitoring of Biogas Solutions

Farmer with biogas plant

- A farm with a biogas plant located in Denmark
- 220 dairy cows, 300 young animals and approx. 100 steers
- Producing approx. 5,600 tons of manure from their own animals
- **Support service:** Concept Design and Development of Biogas Systems & Technology Catalogue

Poultry farming unit

- A poultry farm located in Greece
- No biogas plant in place, but 200–300 tons of manure produced
- **Support service:** Evaluation of Biogas Potential Based on Preliminary Calculations

Buffalo dairy farm

- A buffalo dairy farm in Italy
- 350 buffaloes
- No biogas plant in place, but a preliminary design was available
- **Support service**: Technical Support for Farmers in the Evaluation and Comparison of Plant Suppliers' Quote

ALFA at a glance:

Results and key numbers

Capacity-building

6 Seminars	**221** Stakeholders engaged
7 Webinars	**243** Stakeholders engaged

Awareness raising

25% Increase in social acceptance of biogas plants among civil society

>10,000
Stakeholders with enhanced awareness on benefits of biogas

>1,000
Social media followers

>12,000
Visits to our websites

>15 External events attended by ALFA partners

ALFA at a glance:

Results and key numbers

Replication

10

Replication recommendations

>400

Stakeholders received the replication guide

Policy development

12 Policy-makers participated in ALFA's Policy Roundtable

>300 Policy-makers informed through ALFA's insights and results

7 Policy briefs: 6 at the national level (BE, DK, GR, IT, ES, SK) & 1 at EU-level

Adopt, Adapt, Replicate

ALFA's Recommendations

01

Conduct in-depth needs assessments early

Start with understanding the reality on the ground. Before implementing any support services, it is essential to carry out a detailed needs analysis, combining questionnaires, interviews, and co-creation sessions with farmers, cooperatives, local authorities, and technology providers. ALFA partners found that dedicating time to this phase enabled them to map actual barriers, such as lack of technical knowledge, unclear permitting procedures, or misconceptions about costs, rather than relying on assumptions.

The situation and challenges in the regions should be well understood from the beginning, and relevant regional stakeholders should be aligned with the project's vision and willing to support the activities.

02

One size doesn't fit all

No two regions are identical, and ALFA's experience proved that flexibility is crucial. Services must be adapted to local regulatory frameworks, available feedstock types, and market readiness. For example, in some hubs it was more valuable to combine business modeling with market research, while others needed purely technical feasibility advice.

By tailoring the approach, you can address specific bottlenecks instead of delivering generic solutions that might not fit the audience's realities. Replication teams should be ready to adjust support packages and even offer hybrid services if this meets beneficiary needs better.

Adopt, Adapt, Replicate

03

Collaborate with trusted regional champions

One of ALFA's key lessons was the importance of trusted local intermediaries. Farmer cooperatives, agricultural chambers, and local associations can act as multipliers and advocates. They bring credibility to the project and provide direct access to target groups that might otherwise be hard to reach.

These organisations have built trust over many years. They know the practical realities of livestock farming and they understand local regulatory contexts. By involving them early as outreach channels, you ensure that information about workshops, or services is delivered through voices that farmers already listen to. This approach proved invaluable in ALFA, as hubs that actively worked with local networks saw higher engagement.

04

Define scope & support conditions upfront

Clear communication at the very beginning is essential for success. In several regions, early applicants misunderstood what kind of support they could receive, how much time the process would take, or what information they needed to provide.

It is important to explain from the outset exactly what you offer, what its limitations are, and what role is expected from those taking part. Clear timelines and delivery processes should also be outlined so that everyone shares the same understanding of how the collaboration will proceed. In ALFA, this was achieved by using well-prepared Terms of Reference documents, and introductory sessions where participants could ask questions and receive immediate clarification.

Adopt, Adapt, Replicate

05

Make tools easy-to-use

Complex technical information can be a barrier. ALFA's success was supported by tools like the Decision Support Tool, Atlas Map, and Biogas Forum, all designed to be intuitive and visual. Factsheets and checklists, translated into local languages, will make it easier for farmers and cooperatives to navigate technical and business considerations.

When replicating, ensure that all tools are tested for clarity and accessibility. Include practical examples, case studies, and visual aids so that even non-technical stakeholders can understand and act on the information.

06

Tap into existing networks

ALFA hubs used existing networks, including agricultural advisors, farmer unions, local energy agencies, and even regional media, to share milestones and success stories, and invite participation. Rather than creating new communication channels from scratch, build on trusted platforms where your target audience is already active. This not only increases visibility but also lends credibility to your initiative.

Stakeholders are far more willing to collaborate and take part when messages and activities are delivered through channels and networks they already trust. Tapping into these existing relationships can help you reach and mobilise the right people more effectively.

Adopt, Adapt, Replicate

07

Strengthen face-to-face engagement and engagement in local language

While digital tools are powerful for broad outreach, ALFA clearly demonstrated that personal contact is essential to create a stronger impact. Organising local seminars, co-creation workshops, farm visits, and networking events, especially in local language, fostered trust and meaningful relationships, while also giving participants the space to ask questions freely, share their own experiences, and feel supported by a community rather than isolated in their decision-making.

Consider also integrating storytelling by showcasing local success stories that resonate with farmers and cooperatives.

08

Listen, Learn, Improve

Flexibility and responsiveness are key to successfully support cases for biogas uptake. By actively listening to feedback from beneficiaries and service providers after the first round, the project team identified practical gaps and opportunities for improvement, enabling them to adapt their methods and tools in real time.

The introduction of additional resources, such as the Technology Catalogue, illustrates how learning from early experiences can directly enhance the value and relevance of subsequent activities. Make sure that your services evolve in step with the needs of stakeholders and the realities on the ground.

Adopt, Adapt, Replicate

09

Plan events with seasonal workloads in mind

When planning awareness-raising or capacity-building activities, it is essential to take into account the seasonal cycles and workload patterns of your target audience, especially farmers. Organising events during peak farming seasons, such as planting or harvesting periods, often results in low attendance because stakeholders simply cannot step away from their core activities.

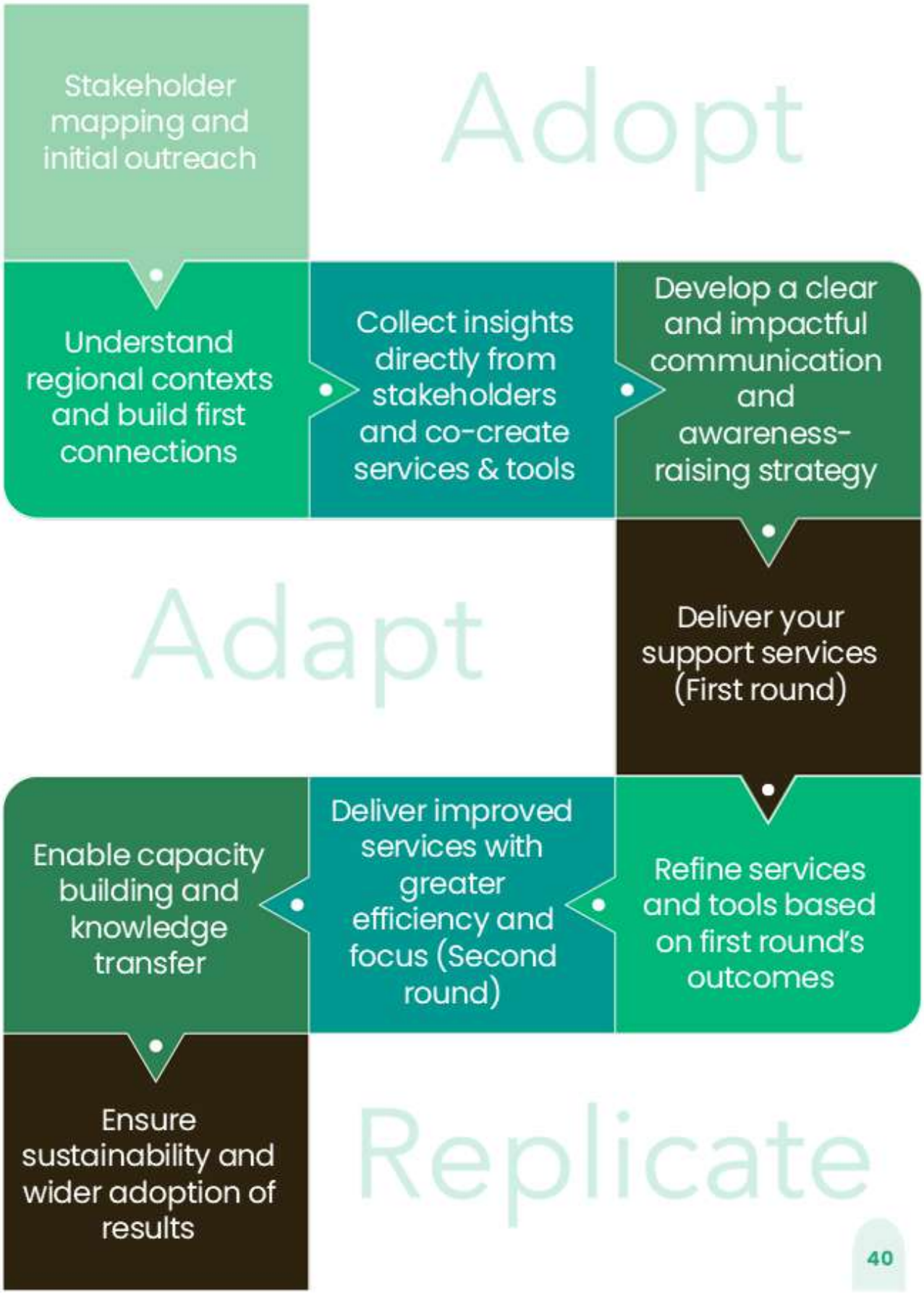
Instead, schedule workshops, seminars, and field visits during periods of lower workload, when participants are more available and receptive. This consideration not only demonstrates respect for their time but also significantly increases engagement, ensuring that your efforts reach the intended audience effectively.

10

Promote early, promote smart

A well-planned promotional campaign is essential to ensure your activities reach the right audience and achieve meaningful participation. Start by clearly identifying the target groups, such as farmers, cooperatives, technology providers, or local authorities, and select communication channels they already use and trust.

Combine traditional outreach (e.g., newsletters, leaflet, posters) with digital tools (social media, mailing lists, local forums) to create multiple touchpoints. Begin promotion well in advance to allow participants time to plan, and make sure all materials are clear, concise, and available in the local language.


Stakeholder mapping and initial outreach
Adopt
Understand regional contexts and build first connections
Collect insights directly from stakeholders and co-create services & tools
Develop a clear and impactful communication and awareness-raising strategy
Deliver your support services (First round)
Adapt
Refine services and tools based on first round's outcomes
Deliver improved services with greater efficiency and focus (Second round)
Enable capacity building and knowledge transfer
Ensure sustainability and wider adoption of results
Replicate

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2. Policy Recommendations

2.1 Approach

Throughout the ALFA project, all partners were encouraged to gather relevant feedback and insights during their Hubs' activities (e.g., mutual learning workshops). While collecting relevant feedback was not mandatory, several partners actively used such opportunities to capture local perspectives and policy-relevant experiences emerging from their hubs.

To support a smooth input collection process, WR prepared and shared a dedicated template for gathering policy-related feedback (available here). This template drew upon the cumulative knowledge generated during ALFA's three years of implementation, covering regulatory frameworks, incentive mechanisms, and other framework conditions observed across the different national contexts.

The ALFA Policy Brief emerged from a thorough internal analysis by the consortium, drawing on evidence and lessons accumulated during three years of project activities. WR developed an initial draft of the ALFA Policy Brief ahead of the project's final event. This early draft served as a working document to be refined through two participatory processes organised by WR during ALFA's Final Event:

- a Policy co-creation exercise, and
- a Policy Roundtable discussion.

Together, these two sessions provided the foundation for validating, refining and finalising ALFA's Policy Brief and recommendations, ensuring they were both evidence-based and co-developed with the relevant stakeholders. The materials used during both the policy co-creation exercise and the policy roundtable, including session guidelines, templates, set of questions and table boards, are provided in the V, VI, VII, VIII.

2.1.1 Policy Co-creation Exercise

The policy exercise was designed as a collaborative co-creation exercise, bringing together diverse participants to identify and refine actionable policy recommendations to accelerate biogas deployment and circular bioeconomy practices. Although the original setup envisioned two thematic rooms, one on **Incentives and Market Mechanisms** and another on **Governance, Regulation, and Public Acceptance**, the format was adapted on the day of the event to foster closer interaction among participants. Therefore, all attendees remained in a single room and formed 4 groups, with 2 working on each thematic set.

The session followed a two sub-sessions structure based on the provided guidelines:

- **Session 1:** Co-creation of policy recommendations

In the first session, participants were randomly divided into groups, and each group had to work through the assigned themes to formulate concrete and actionable recommendations. Participants were encouraged to capture ideas with attention to clarity, feasibility, and the link between the identified problem, the proposed policy tool, and the expected effect.

- **Session 2:** Policy Backcasting

To make the exercise both structured and forward-looking, we also introduced a backcasting exercise. This idea emerged from the fact that during ALFA's implementation, we collectively

recognised that Denmark had achieved a notably advanced level of biogas integration, with a coherent policy framework, mature market mechanisms, and strong stakeholder cooperation, in stark contrast to most of the ALFA pilot regions. Therefore, Denmark's current level of biogas deployment and governance was used as a reference point for envisioning the EU's biogas landscape by 2035.

Therefore, building on Session 1 results, participants were asked to "work backwards" from a vision where the EU reaches Denmark's current level of biogas deployment by 2035. Ideas were placed along a timeline, distinguishing Quick-Wins (2025 - 2027) from Long-term Reforms (2028 - 2035). This structure encouraged participants to differentiate between immediate administrative fixes and structural policy shifts that would require more time and coordination. The photos below capture moments from the co-creation and Policy Backcasting exercises, showcasing the active participation and collaborative atmosphere that shaped ALFA's recommendations.

Figure 1. Group discussions during the ALFA policy co-creation workshop

2.1.2 Policy Roundtable

Following the co-creation exercise, WR moderated a policy roundtable aimed at providing an opportunity for in-depth dialogue among sector experts, policy advisors, and civil society actors. The panellists were invited to discuss a set of guiding questions prepared in advance, each tailored to different themes and areas of expertise (available in the Appendix VI). This format served as a basis for the moderation and ensured that contributions reflected each participant's knowledge domain while maintaining a structured discussion around the core themes of the draft ALFA Policy Brief.

The roundtable was moderated by WR and featured a panel of 4 representatives of key stakeholders relevant to the livestock biogas value chain, including representatives of industry, research and civil society. More specifically, Dr. Vasileios Diamantis, from the Aristotle University of Thessaloniki and the Hellenic Biogas Association, Anna Onida from the European Biogas Association, Bruno Sander Nielsen from Biogas Danmark, and Maximilian Herzog from the NGO FoodRise EU. Together, they explored and discussed how biogas could be better recognised as a renewable energy source and integrated across policy domains such as agriculture, waste management, and climate mitigation.

Discussions also touched on cross-sector collaboration within the European Commission, the need for coherent regulation across Directorates-General, and the challenge of balancing biogas expansion with environmental and social sustainability. By bringing together perspectives from different European contexts, the roundtable validated the core messages emerging from the co-creation workshop and helped finalise ALFA's set of actionable policy recommendations. The photos below capture moments from the ALFA policy roundtable, where stakeholders exchanged perspectives on how to strengthen policy coherence and accelerate biogas deployment.

Figure 2. Panel discussion during the ALFA policy roundtable

2.2 Results of the co-creation exercise

Across the four discussion groups, several recurring themes and shared priorities emerged:

a. Simplifying and decentralising permitting

Nearly every group identified **permitting complexity** as a major bottleneck. Participants called for *streamlined and harmonised procedures* across regions, emphasising that simplification should not come at the expense of environmental safeguards or transparency.

Practical suggestions included automating routine approval checks, decentralising permitting authorities to regional levels, and improving coordination between ministries and agencies. One of the groups further stressed the need for **harmonisation of definitions**, especially regarding digestate classification, which currently varies by feedstock composition and creates confusion during compliance checks. Several participants linked regulatory streamlining to **digitalisation**, arguing for online application systems and data-driven traceability.

Interestingly, simplification was consistently framed not merely as administrative efficiency but as a **trust-building measure**: when rules are clearer and fairer, citizens and farmers alike are more likely to engage with the system.

b. From social acceptance to social involvement

A powerful conceptual shift came from one of the groups, which proposed reframing “social acceptance” to “social involvement.” Rather than convincing communities to accept biogas installations after the fact, participants argued for co-creation from the outset, involving local citizens, farmers, and municipalities early in the project design.

Further ideas from the rest of the groups complemented this by promoting participatory regulatory models in which plant owners are expected to engage regional stakeholders through structured co-creation processes. Others suggested social media campaigns, school visits, and transparent communication about biogas benefits and circular economy linkages.

This theme was reinforced by repeated references to education – both technical (for engineers and plant operators) and public (for communities). Education was seen as a long-term investment that builds local confidence and addresses misconceptions about biogas technology.

c. Linking biogas to circular economy and environmental integrity

Several groups connected biogas policy to broader circular economy and sustainability goals. They emphasised the need to demonstrate how biogas improves waste management, enables nutrient recycling through digestate, and supports co-product valorisation.

Two of the groups highlighted digestate management as a focal issue, calling for clear legal definitions and improved monitoring. The adoption of the RENURE agreement was specifically mentioned as a means to promote circularity and environmental consistency. Participants also warned that simplification should not weaken environmental standards, echoing the principle that policy coherence and public trust are mutually reinforcing.

d. Incentives, market design, and fairness

From the market perspective, participants recognised that financial incentives remain essential but should evolve toward self-sustaining business models. Some suggested supporting plants in developing intermediate business models to remain viable after subsidies expire, while others proposed state aid schemes, carbon credits, and renewable energy community incentives.

Fairness was a recurring concern: some of the groups agreed that local populations should share in the benefits of biogas projects, either through community ownership, profit-sharing, or local

reinvestment mechanisms. In some cases, fairness was directly linked to positivity-arguing that “the closer people are to the benefits, the more positive they become.”.

Several participants also pointed out the limitations of grid injection, suggesting that self-consumption models may be more feasible and locally beneficial in certain contexts. In the long term, participants called for an EU-wide, legally binding biogas target to provide clear market signals and policy consistency.

e. Knowledge, communication, and institutional coordination

Across most of the participants, there was a strong emphasis on knowledge sharing and institutional communication. Quick wins included awareness campaigns and capacity-building initiatives for both local authorities and citizens. Over the longer term, participants envisioned improved coordination among ministries and the establishment of structured communication channels between government levels.

Education, again, emerged as a bridge between the technical and social dimensions of biogas: training engineers and operators to ensure quality, while educating citizens to understand its environmental and economic value.

Summary

Overall, the co-creation exercise revealed a shared desire to move from fragmented, compliance-driven regulation to a more integrated, participatory governance model for biogas. Participants consistently called for simplification, clarity, and fairness–accompanied by active community engagement and educational investment. The timeline discussions helped distinguish between short-term fixes–such as streamlining permitting, decentralising approvals, and boosting awareness–and long-term reforms, including education systems, market transitions, and binding EU targets. In essence, the exercise underlined that the success of biogas policy will depend not only on financial incentives or technology, but on the social architecture that supports trust, collaboration, and shared value within local communities.

2.3 Highlights of the roundtable discussion

a. Recognising biogas as a true renewable - and beyond

A core message from the discussion was that biogas must be formally and politically recognised as a renewable energy source on equal footing with solar, wind, or hydro. Participants argued that the contribution of biogas production from manure extends far beyond energy production: it delivers waste management, can help reduce agricultural emissions, and supports nutrient recycling. However, because biogas spans several regulatory areas, it is simultaneously governed by multiple EU laws and frameworks, from the Renewable Energy Directive to waste and agricultural policies. This overlap, while reflecting biogas’s versatility, also creates institutional complexity. Some participants agreed that without stronger coordination between DGs (Directorates-General of the European Commission) and among Member States, EU policy risks responding in silos, energy regulators treating biogas differently from environmental or agricultural authorities. The proposed solution was enhanced cross-DG collaboration and the establishment of joint strategies or working groups to harmonise objectives and streamline legislation.

b. Biogas as infrastructure and enterprise

Another highlight of the discussions was that biogas should be understood not only as a renewable energy source, but as infrastructure delivering multi-sectoral solutions. This framing shifts the focus from production volumes to system services, such as stabilising energy supply, managing organic waste, and providing rural jobs.

Participants stressed that policy language matters: as long as biogas is described only as “renewable fuel”, it remains confined within energy metrics. If instead, it is defined as infrastructure–akin to water treatment or waste collection, then public investment and planning priorities can more easily accommodate it. Policymakers should therefore be supported in articulating the cross-sectoral benefits of biogas to unlock new funding pathways and governance mechanisms.

At the same time, the economic structure of the sector remains fragile. The current business model, particularly for large-scale plants, often requires long payback periods, making investment less attractive. Some participants pointed out that economies of scale can help balance costs, as seen in Denmark, where large, centralised plants also provide outlets for smaller farmers. Yet this model cannot be applied uniformly, since the notion of “small-scale” differs by region, reflecting variations in production systems and farm structures across Europe. This diversity underscores that biogas policy must remain context-sensitive, balancing economic efficiency with inclusiveness and local feasibility.

c. Sustainability and emissions perspective

The roundtable underscored that increasing biogas production must not come at the expense of sustainability. The expert panellists called for an integrated approach to environmental, economic, and social sustainability. The example of manure management was discussed in depth: while biogas production and manure management can help reduce agricultural methane emissions, the group noted that the potential from manure is finite. Therefore, strategies should start from a future-oriented perspective–defining what sustainable manure management should look like–before quantifying potential biogas output.

Another key point was the treatment of biogenic CO_2. Participants stressed that this CO_2 would otherwise be released naturally and should therefore be treated distinctly within emissions accounting frameworks. Some proposed that obligations for CO_2 allowances could be designed to incentivise capture or reuse, aligning biogas with carbon market mechanisms.

d. Social acceptance, regional differences, and public policy design

Social acceptance emerged again as a decisive factor. Participants observed that attitudes toward biogas differ markedly across regions, influenced by cultural, regulatory, and environmental contexts. For instance, strict national rules on odour or land use affect how communities perceive plants. Consequently, public engagement and communication strategies must be tailored to local expectations, and EU policy should guide without imposing one-size-fits-all standards.

Interestingly, one of the panelists stressed that social acceptance should precede policy ambition: rather than setting high numerical targets first, Member States should first ensure that citizens understand and support biogas development.

e. Market fragmentation and infrastructure challenges

The roundtable also pointed to a fragmented EU biomethane market. Some countries still lack the necessary legislation for grid connection, quality standards, or Guarantees of Origin. The majority called for harmonised frameworks to address these gaps and enable cross-border trade.

From a system perspective, the participants recognised the importance of energy stability and security, particularly considering recent political volatility. The Danish experience was again cited as illustrative: in 2012 Denmark adopted a national Energy Agreement that provided clear feed-in tariffs, later evolving toward premium-based schemes for biomethane. This predictable framework allowed the sector to mature while gradually reducing subsidy dependence - a trajectory many participants considered a useful reference for EU-wide policy evolution.

Summary

Overall, the policy roundtable revealed a broad consensus that biogas occupies a unique cross-sectoral position that current EU policy architecture does not yet adequately reflect. Participants urged policymakers to adopt a more systemic lens, treating biogas simultaneously as a renewable energy source, an agricultural mitigation tool, a waste management solution, and a regional development driver.

To achieve this, institutional collaboration, clear regulatory alignment, and context-sensitive social engagement are crucial. Future EU biogas policy should aim not only to expand production but also to design frameworks that reflect the technology's integrative nature, bridging silos, ensuring both environmental and socio-economic sustainability, and building the societal legitimacy needed for long-term success.

3. ALFA's Evidence-Based Takeaways and Policy Pathways for EU and Hubs[2]

[2] For higher-quality version, please download ALFA's Policy Brief here.

Policy Recommendations to Unlock the Biogas Potential of European Livestock Farming

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Abbreviations

C	Challenge
CAP	Common Agricultural Policy
CAPEX	Capital Expenditure
CO_2	Carbon Dioxide
COD/BOD	Chemical Oxygen Demand / Biological Oxygen Demand
DSO	Distribution System Operator
ETS2	EU Emissions Trading System 2
FIT	Feed-in Tariff
IED	Industrial Emissions Directive
NECP	National Energy and Climate Plan
PR	Policy Recommendation
RED III	Renewable Energy Directive III
RES	Renewable Energy Sources
RRP	Recovery and Resilience Plan

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Key messages

Drawing on insights from six EU countries (Belgium, Denmark, Greece, Italy, Slovakia, and Spain), this policy brief outlines practical policy recommendations to accelerate the uptake of manure-based biogas across Europe. It highlights common challenges and proven solutions for making biogas a viable, accepted, and scalable part of the rural energy transition. Key messages include:

1. **Cutting permitting times is essential to boost biogas deployment:** Lengthy and fragmented permitting remains the single largest barrier to biogas rollout across Europe. Streamlined and predictable approval processes would reduce uncertainty, accelerate project development, and ensure that viable initiatives are not lost due to avoidable delays.
2. **Public acceptance should be a prerequisite, not an afterthought:** Even technically and financially sound projects can face resistance if local communities are not engaged. Transparent communication, awareness campaigns, and involvement of trusted local actors are key to countering misconceptions and building trust from the outset.
3. **Provide fair financing opportunities across the sector, especially for small-scale farms:** Current support schemes often favour large-scale installations, leaving smaller farm-based or cooperative projects at a disadvantage. Tailored financial tools and predictable incentives are needed to unlock replication potential and secure private investment.
4. **Support that continues beyond approval ensures projects succeed in the long run:** Biogas plants require long-term stability, not just initial funding. Advisory services, cooperative structures, and follow-up support can ensure that installations remain viable, well-managed, and integrated into local value chains.
5. **Strong feedstock partnerships mean stronger, more reliable plants:** Secure and cost-effective feedstock supply is essential for plant viability. Cooperative collection models and logistics hubs can reduce costs, stabilise input flows, and strengthen collaboration between farmers and other stakeholders.
6. **Robust regulation can unlock the market potential of digestate and CO_2:** Clear and harmonised rules for digestate use and recognition of biogenic CO_2 as a valuable by-product would create new revenue streams and circular economy benefits. Coherent regulation at EU and national levels is crucial to support soil health, carbon markets, and sustainable farming practices.

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Summary

The ALFA project worked across six European countries (Belgium, Denmark, Italy, Greece, Spain and Slovakia) to support the upscaling of manure-based biogas. By delivering tailored advisory services to farmers, cooperatives, and other cases, ALFA uncovered both the common barriers that hold the sector back and practical recommendations that can accelerate its deployment. Across all ALFA countries, the potential is clear, but deployment is slowed by complex permitting, limited tailored finance, unclear rules on digestate and CO_2 use, and low public awareness.

The policy recommendations presented in this brief are drawn from real-world experience and consultations and represent the most common needs expressed by stakeholders on the ground, alongside emerging approaches that show promise for replication. While national contexts differ, these recommendations point to a shared agenda for enabling biogas to play its full role in the energy transition and circular economy.

By acting on these recommendations, policymakers can unlock significant rural, environmental, and socio-economic benefits. The lessons from ALFA's work demonstrate that with the right enabling conditions, manure-based biogas can become a reliable, socially accepted, and locally driven part of Europe's renewable energy future.

Introduction

Biogas in the EU

Biogas production in the European Union has been steadily expanding, driven by renewable energy targets, decarbonisation strategies, and agricultural sustainability policies. The Renewable Energy Directive III underscores the importance of renewable gases, including biogas and biomethane, in meeting the EU's climate ambitions, while REPowerEU sets the highly visible target of 35 billion cubic meters of biomethane annually by 2030, with a strong focus on agricultural feedstocks (EC, 2025)[1]. These commitments establish a favourable legislative direction at the EU level, linking biogas to both energy security and agricultural resilience.

Yet, the level of market maturity varies sharply across Member States. Denmark has emerged as a frontrunner, successfully integrating biomethane into its gas grid at scale through stable long-term support schemes. By contrast, countries such as Greece and Slovakia remain in the early stages of market development, with only a handful of operational plants and limited support frameworks. This unevenness shows that while the EU sets overarching targets, national frameworks, particularly permitting systems, funding mechanisms, and grid access rules, ultimately shape the pace of deployment.

At the same time, Europe is only realising a fraction of its technical potential. Current production accounts for just 2.65% of what could be achieved with available feedstocks, according to recent research (Bumharter, C. et al., 2023[2]). Much of this untapped potential lies in manure- and residue-based feedstocks, which align closely with both the Common Agricultural Policy's (CAP's) goals on climate and nutrient management and with ALFA's emphasis on circular, waste-based solutions.

Unlocking this resource is less a question of technology than of regulatory streamlining, farmer engagement, and financial support, precisely the areas highlighted by the ALFA countries as critical barriers.

[1] EC (2025). "Biomethane." Available here

[2] Bumharter, Cornels, David Bolonio, Isabel Amez, Maria Jesus Garcia Martinez, and Marcelo F. Ortega. 2023. "New Opportunities for the European Biogas Industry: A Review on Current Installation Development, Production Potentials and Yield Improvements for Manure and Agricultural Waste Mixtures." Journal of Cleaner Production 388 (February): 135867. https://doi.org/10.1016/j.jclepro.2023.135867. Available here

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Finally, new opportunities are emerging in the form of small-scale, farm-based digesters. These models, which are particularly attractive to livestock farmers, directly mitigate methane emissions, recycle nutrients, and generate local value (Bumharter, C. et al., 2023). Unlike industrial-scale approaches that risk public opposition or feedstock competition (when demand increases for a feedstock, but supply doesn't), they embed projects within communities and distribute benefits more equitably. Such decentralised systems illustrate how biogas and biomethane can simultaneously advance climate action, rural development, and circular economy objectives, provided the enabling environment supports their deployment. Upcoming Circular Economy Act and bioeconomy strategy are very aligned, RePower EU Roadmap 2025 with strategic autonomy in renewable energy and fertilisers as well.

The ALFA Project

The ALFA project worked in six European countries (BE, DK, GR, ES, SK, IT[3]) to accelerate manure-based biogas deployment. Each national hub engaged across diverse European contexts. Each national hub engaged directly with farmers, cooperatives, and other actors, providing tailored advisory services on technical, financial, and business issues. This hands-on approach revealed both common challenges, such as complex permitting and limited financial support for small-scale projects, and country-specific issues shaped by local market maturity, regulations, and public acceptance. Our activities within the ALFA regions, helped us in developing practical recommendations that reflect the actual conditions and can be replicated or scaled across diverse European contexts.

In addition to its national hub activities, ALFA is part of a Biomethane Cluster4, consisting of other EU-funded projects aiming to unlock the potential of biomethane and other renewable gases.

Biogas and Biomethane: A connected pathway

Manure-based biogas, the focus of ALFAs work, delivers clear benefits in decentralised energy supply, nutrient recycling, and greenhouse gas mitigation. Produced primarily through anaerobic digestion of manure and other agricultural residues, it can be used directly for heat and power generation at the local level, reducing dependence on fossil fuels and supporting rural economies (EBA, 2025[5]).

However, when upgraded to remove carbon dioxide and other impurities, this same biogas becomes biomethane, which can be injected into the natural gas grid, used as a transport fuel, or stored for flexible use across multiple sectors. This upgrading potential means that manure-based biogas projects are directly relevant to broader EU renewable gas strategies, particularly the REPowerEU target of producing 35 bcm biomethane annually by 2030.

Strategically, this dual-use potential multiplies the return on investment in biogas. Plants designed or retrofitted for upgrading can switch between local energy use and biomethane production depending on market conditions and infrastructure availability. This flexibility allows rural producers to benefit from both local energy security and participation in higher-value, long-distance markets. For policymakers, it means that investments in permitting reform, advisory services, and public awareness campaigns are not just supporting one segment of the renewable gas market, they are building capacity for the entire biomethane value chain.

By aligning national and local policies for biogas with enabling measures for biomethane, such as streamlined permitting, fair and accessible financing, and clear rules for digestate and CO_2 use, policymakers can ensure that today's decentralised projects are ready to connect to tomorrow's larger-scale renewable gas markets.

[3] In addition to the six original ALFA countries (Belgium, Denmark, Greece, Italy, Slovakia, and Spain), stakeholders from other countries, including Germany, the Netherlands, Portugal, and Ukraine, also participated in project activities.
[4] The following projects a part of the biomethane cluster: BIOMETHAVERSE, SEMPRE-BIO, HYFUELUP, METHAREN, GreenMeUp, CarbonNeutralLNG, FlexSNG, PRODIGIO, BIOStar2C (website not available), ETIP-B 2022-2025, Photo2Fuel, Value4Farm.
[5] About Biogas and Biomethane | European Biogas Association. Available here.

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Beyond Energy: Social and environmental value of biogas and biomethane

While biogas and biomethane are increasingly recognised as essential components of Europe's renewable energy mix, questions are often raised about the sustainability of their expansion. Concerns typically focus on scenarios where deployment is driven by energy crops or large-scale industrial facilities, which can lead to land-use conflicts, biodiversity pressures, or limited local benefits. These risks cannot be ignored, but they do not define the entire sector.

ALFA's work across several EU countries demonstrates that a different pathway is both possible and desirable. Here, biogas and biomethane are developed primarily through manure management, agricultural residues, and other unavoidable waste streams. This approach directly reduces methane emissions from livestock systems while contributing to nutrient recycling and soil health. It avoids competition with food production and aligns energy generation with circular economy principles.

Equally important is to highlight the benefits of farm- and community-based projects that embed value locally. These projects create rural jobs, diversify farmer income, and strengthen cooperation among stakeholders. When farmers and cooperatives are in the lead, the energy transition becomes a tool for empowerment rather than an external burden.

The social dimension is also at the forefront. Public resistance often arises when communities perceive projects as imposed or disconnected from their priorities. By contrast, ALFA's target regions stress the importance of transparency, local participation, and proactive communication. Site visits at plants, awareness-raising campaigns about the benefits of biogas and tackling misperceptions, and the involvement of trusted local actors are practical steps that build trust. In this way, public acceptance is not an afterthought but a foundation of deployment.

Taken together, these insights show that biogas and biomethane can follow a sustainable pathway when developed responsibly. The challenge is not whether to expand these technologies, but how so that to ensure long-term legitimacy and success in Europe's renewable transition.

Challenges to deployment

The potential for manure-based biogas is significant across the ALFA countries, however, several recurring barriers hinder its expansion. The challenges (Cs) identified in ALFA arise from both policy and market conditions, and their impact varies by country, however, they are common enough to demand coordinated action. A list of the relevant challenges follows.

C1: Administrative complexity

Permitting procedures are often slow, fragmented, and unpredictable. In countries with decentralised governance, such as Spain and Belgium, rules may differ between regions, be unclear, or subject to change. Even in more centralised systems, multiple agencies may be involved, and response times can be lengthy, delaying project implementation and, in some cases, jeopardising access to time-limited support schemes.

C2: Limited access to finance

Access to suitable financing remains a major hurdle, particularly for small scale and cooperative projects. Existing support mechanisms frequently prioritise large-scale installations, while smaller units face high capital costs and limited loan availability. In some countries, banks are reluctant to finance projects due to perceived risks or past underperformance of biogas plants.

C3: Regulatory gaps for by-products

Rules governing the use of digestate and captured CO_2 are often unclear, inconsistent, or overly restrictive. This creates barriers to developing stable markets for these by-products, limiting their contribution to the circular economy. In certain countries, stakeholders reported uncertainty over nutrient content standards or restrictions on land application, further complicating their use.

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C4: Low public awareness and social acceptance

In several ALFA countries, public awareness of biogas benefits is low, and misinformation can fuel local opposition. In some cases, negative perceptions stem from earlier poorly managed projects, leading to a lack of trust in new developments. Limited communication and engagement from project developers can exacerbate these challenges, slowing down permitting and reducing community support.

C5 - Feedstock logistics constraints

Collecting and transporting manure and agricultural residues remains a logistical challenge, especially where farms are small, scattered, or lack cooperative structures. Transport costs, seasonal availability, restrictive regulations to import manure and competing uses for residues all affect the stability of feedstock supply chains, reducing the economic viability of plants in some regions.

ALFA's Policy Recommendations

The following recommendations are derived from the work of the six ALFA regions and reflect both common challenges across countries and targeted actions that can deliver tangible results. Each Policy Recommendation (PR) directly addresses one of the challenges identified in the previous section.

PR1: Streamline and simplify permitting (C1)

Lengthy, fragmented, and unpredictable permitting processes create major barriers to biogas deployment. National and regional authorities should establish clear, time-bound procedures for project approvals, ideally through a single point of contact. In decentralised countries, the priority should be to make regional permitting procedures clearer, faster, and more efficient, rather than seeking homogeneity across regions.

Digital one-stop platforms and the automation of routine administrative checks could further reduce delays while maintaining environmental integrity through independent oversight. Harmonised definitions of regulatory elements, such as digestate composition, would ensure consistent interpretation across Member States and avoid uncertainty during approval processes. In parallel, clear communication and capacity building within local authorities are needed to support effective implementation and consistent application of new rules. Simplified permitting will particularly benefit small-scale and cooperative projects, which often lack the resources to navigate complex administrative systems.

PR2: Tailored financial support for small-scale projects (C2)

Existing support schemes often favour large installations, leaving farm-based or cooperative plants without viable funding options. Policymakers should introduce targeted financial instruments, such as low-interest loans, grants, or loan guarantees, specifically adapted to smaller-scale business model.

Moreover, financial frameworks should account for both regional and structural diversity, recognising that the definition of "small-scale" farming varies significantly across Europe. In countries such as Denmark, large centralised plants allow smaller farms to participate collectively, while in Southern and Eastern Europe, the same model may not be economically feasible. Support should therefore remain proportionate to farm size and regional realities.

Moreover, to enhance long-term resilience, financial tools could also promote community-based and farmer-led business models capable of maintaining production once initial subsidies expire.

Overall, the stability and predictability of support schemes are essential to encourage long-term planning and attract private investment.

PR3: Support cooperative feedstock supply models and logistics (C5)

Stable feedstock supply is essential for plant viability, but small farms face high logistical costs. Incentivising cooperative approaches, such as joint manure collection systems or shared pre-treatment facilities, can reduce costs and ensure reliable feedstock flows. Public support for cooperative infrastructure and coordination mechanisms

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can also strengthen rural collaboration and economic resilience. To make these systems more effective, regional coordination platforms and digital management tools could facilitate planning and traceability of feedstock movements. In addition, introducing fair cost-sharing mechanisms between participating farms would help balance economic benefits and responsibilities, ensuring that cooperative models remain viable for both small and medium-sized producers.

PR4: Clarify and standardise rules for digestate and CO_2 use (C3)

Digestate is a valuable fertiliser substitute, and captured CO_2 from biogas upgrading can be used in food, industrial, or agricultural applications. However, unclear or inconsistent regulations limit these opportunities.

To unlock their full potential, a common EU framework for digestate classification and CO_2 utilisation could provide greater legal certainty for operators and ensure coherence between agricultural, environmental, and energy policies. Clearer rules would also help harmonise nutrient content standards, land application requirements, and CO_2 quality criteria, enabling market development, increasing project revenues, and enhancing the circular economy benefits of biogas in livestock farming. In turn, greater regulatory clarity would strengthen investor confidence and support the emergence of cross-border markets for secondary raw materials derived from biogas production.

PR5: Increase public awareness and communication to increase social acceptance (C4)

Social acceptance is critical to biogas deployment. Public information campaigns should highlight the environmental, economic, and local benefits of biogas, with a focus on climate action, nutrient recycling, and rural job creation. To make these efforts more effective, communication strategies should go beyond awareness-raising to foster genuine community involvement. Encouraging citizens, farmers, and local authorities to participate in project design and benefit-sharing arrangements can help create a stronger sense of local ownership.

Moreover, ensuring that part of the economic and environmental benefits remain within the community further strengthens trust and demonstrates the tangible value of biogas at the regional level. Education and training initiatives, particularly in schools and technical institutes, can also help build lasting understanding and support among younger generations and professionals.

Early engagement with communities, transparent communication on plant operations, and showcasing successful demonstration sites can help counter misinformation and build trust. A consistent and proactive approach to communication will ensure that social involvement becomes an integral part of long-term sector development.

PR6: Guarantee grid access and infrastructure support (C5)

Limited and costly access to gas and electricity grids is a recurring obstacle, especially in Spain, Slovakia, and Greece, while Italy stresses the need to align infrastructure with biomethane upgrading. Without fair and affordable connection rules, even viable projects cannot scale. Policymakers should require Distribution System Operators (DSOs) to take responsibility for connection pipelines, recognise renewable gas infrastructure as a public interest, and ensure transparent, non-discriminatory access.

Additionally, a more coherent approach to infrastructure planning would help reduce the current fragmentation of biomethane markets and ensure that national grid codes evolve in step with EU energy objectives. In areas where grid injection remains technically or economically challenging, supporting local self-consumption models can offer a practical pathway to market participation. Strengthening coordination between DSOs, regulators, and project developers would also improve transparency, shorten connection timelines, and make investment planning more predictable.

Table 1 provides a consolidated overview of the challenges (C1–C5) and corresponding policy recommendations (PR1–PR6) identified across the six ALFA countries.

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Table 1. Identified Challenges & Policy Recommendations per ALFA Hub

PRs[6] / Cs[7]	BE	DK	GR	IT	SK	ES
PR1 / C1						
PR2 / C2						
PR3 / C5						
PR4 / C3						
PR5 / C4						
PR6 / C5						

Cross-country patterns and observations

The results presented in Table 1 point to two clear priorities shared across all the ALFA countries: *PR1 - Streamline and harmonise permitting* and *PR5 - Increase public awareness and social acceptance*. The first recommendation reflects a common challenge across all participating countries - administrative complexity, lengthy approval timelines, and inconsistent regional requirements create uncertainty for investors and developers, slowing the pace of deployment. Streamlining and standardising permitting processes, especially in decentralised governance contexts, are consistently seen as measures that could unlock significant growth.

Equally prominent is PR5 - Increase public awareness, which emerges as a decisive factor for the success of biogas initiatives. Even when projects are technically sound and financially viable, they can face strong local resistance if communities are not well-informed or engaged.

Misconceptions about odour, environmental impact, and safety remain common, often rooted in past negative experiences. The urgency of this issue, however, differs across regions: while in some contexts (e.g., Spain or Italy) public awareness and acceptance remain critical barriers, in others it is acknowledged but less pressing compared to permitting or financing challenges. To counter this, stakeholders recommend targeted awareness campaigns, open days at biogas plants, transparent communication, and the use of trusted local actors to deliver messages.

A second tier of recommendations, PR2 - Tailored financial support and PR6 - Guarantee grid access and infrastructure, also appears prominently across multiple regions. These reflect recognition that access to finance remains a structural barrier for smaller-scale, farm-based, and cooperative projects, which are often excluded from existing schemes designed for large plants. Again, the severity of this barrier varies: for example, smaller-scale projects in countries like Slovakia and Greece face more acute financing challenges, whereas in more mature markets (e.g. Denmark), issues around finance are not the primary bottleneck. PR6 builds on this by addressing the infrastructure barriers that frequently block deployment, particularly the high costs and uncertainties of grid connection. Ensuring fair and transparent access rules, clarifying the role of DSOs, and investing in local collection and injection capacity are essential to unlock the sector's growth potential and enable manure-based biogas to scale into biomethane markets. Additionally, PR4 - Clarify and standardise rules for digestate and CO_2 use, meanwhile, appears consistently across almost all target regions. Regulatory ambiguity, restrictions on use, and underdeveloped market frameworks currently prevent digestate and CO_2 from being fully valorised.

Other recommendations emerge as more context-specific but no less important within their respective national settings. PR3 - Support cooperative feedstock supply models and logistics features strongly in countries where fragmented farm structures and high transport costs undermine project viability. It should be noted, that Denmark appears to be at a more advanced stage of biogas deployment, with fewer critical barriers reported compared to other countries, a sign of the country's mature regulatory framework, established infrastructure, and long-standing policy support.

Alignment with the EU Policy Landscape

ALFA's recommendations are not developed in isolation but stand in direct dialogue with the European Union's

[6] Policy Recommendations (PRs)
PR1: Streamline and harmonise permitting. PR2: Tailored financial support for small-scale projects. PR3: Support cooperative feedstock supply models and logistics. PR4: Clarify and standardise rules for digestate and CO_2 use. PR5: Increase public awareness and social acceptance. PR6: Guarantee grid access and infrastructure support

[7] Challenges (Cs)
C1: Administrative complexity. C2: Limited access to finance. C3: Regulatory gaps for by-products. C4: Low public awareness and social acceptance. C5: Feedstock logistics constraints

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strategic objectives and legislative framework. By mapping the five core policy recommendations against existing EU initiatives (Table 2), it becomes clear that, in general, ALFA's recommendations are largely aligned with broader policy ambitions, though they also highlight differences in how these ambitions play out in practice. From RED III's permitting simplification to the Fertilising Products Regulation (FPR) on digestate use, each challenge identified locally corresponds to active EU regulations.

To operationalise this alignment, the section below outlines the concrete EU policy frameworks most relevant to each recommendation.

- **PR1 - Streamline and simplify permitting:** A solution would be to truly enforce the RED III provisions on permitting simplification. This includes ensuring that all Member States establish digitalised procedures and a one-stop shop for producers, thereby reducing delays and uncertainty for project developers.

  Moreover, in exchanges with stakeholders, it became clear that permitting complexity stems from three separate procedural lines: energy, building/construction, and environmental approvals, where progress in one often triggers or delays progress in the others. These processes are not always coordinated, leading to unnecessary delays or illogical sequencing. Moreover, responsibilities are distributed across different governance levels (NUTS 1, 2, or 3), which can slow down decision-making. Finally, permitting frameworks often apply the same requirements to very different types of biogas plants, such as on-farm anaerobic digestion, landfill gas recovery, or industrial biogas facilities, despite their vastly different designs and environmental impacts. This "one-size-fits-all" approach creates unnecessary administrative burdens, particularly for smaller-scale farm-based projects.

Table 2. Bridging ALFA's PRs with EU Policy Frameworks and Strategies

ALFA PRs[8]	Relevant EU Strategies / Regulations[9]
PR1	RED III (Art. 16 on permitting simplification); REPowerEU (targets for faster rollout)
PR2	Common Agricultural Policy (CAP)
PR3	
PR4	EU Fertilising Products Regulation
PR6	The Gas Package

- **PR2 - Tailored financial support for small-scale projects:** Support schemes should be designed to avoid favouring a single type of farm-size or feedstock. In particular, they must not favour large-scale projects or exclude livestock manure, which represents a crucial resource for both methane mitigation and renewable gas production. Through targeted rural development measures, the CAP can ensure that equal access to finance for both small and large-scale projects, and that manure-based biogas becomes not only a climate tool, but also a new income stream for livestock farmers.

- **PR3 - Support cooperative feedstock supply models and logistics:** Collaborative farmer-based models should be further supported under the CAP to provide financial and organisational backing to farmer cooperatives, manure hubs, and regional bioenergy clusters, ensuring more effective feedstock mobilisation.

- **PR4 - Clarify and standardise rules for digestate and CO_2 Use:** For digestate, a review of the EU Fertilising Products Regulation (FPR) is urgently needed. Current criteria are overly rigid and difficult to comply with, especially for smaller-scale producers, falling short of the circular economy

[8] Policy Recommendations (PRs)
PR1: Streamline and harmonise permitting; PR2: Tailored financial support for small-scale projects; PR3: Support cooperative feedstock supply models and logistics; PR4: Clarify and standardise rules for digestate and CO_2 use; PR5: Increase public awareness and social acceptance; PR6: Guarantee grid access and infrastructure support

[9] EU strategies and regulations listed in this table are drawn from the official European Commission webpage and related legislative documentation.

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objectives the regulation was meant to support. The ongoing evaluation of the FPR must deliver a comprehensive revision introducing requirements that are both scientifically sound and operationally feasible. In the interim, the EC should encourage Member States to adopt clear national legislation granting end-of-waste status and legal certainty for all digestate-derived products, including organic fertilisers and soil improvers. These frameworks should be simple to implement and avoid unnecessary administrative burden.

- **PR5 - Increase public awareness and social acceptance:** Policymakers should leverage the Common Agricultural Policy (CAP) rural development programmes to co-finance initiatives that bring biogas closer to the public. This includes supporting demonstration farms, organising open days at biogas plants, and running targeted awareness campaigns. These activities can showcase tangible benefits such as reduced greenhouse gas emissions, nutrient recycling, and new income streams for farmers. Importantly, trusted local actors (e.g., cooperatives, advisors and municipal authorities) should be actively involved in delivering messages, ensuring communication is transparent, relatable, and responsive to community concerns.
- **PR6 - Guarantee grid access and infrastructure support:** This recommendation is directly linked to the implementation of the Gas Package, which must ensure transparent and fair rules for biogas/biomethane grid access, as well as infrastructure investment for collection, upgrading, and injection.

Moving ahead

Moving forward, EU and national policymakers should prioritise measures with broad cross-country consensus, such as streamlining permitting processes and improving public awareness, while also supporting targeted interventions that respond to specific market and regulatory contexts. A balanced approach is essential: EU-wide frameworks can ensure consistency and market stability, while national adaptation will allow each Member State to leverage its unique agricultural structures, resource availability, and governance systems.

The evidence gathered through the ALFA countries demonstrates that manure-based biogas can play a central role in Europe's transition to a low-carbon, circular economy, but only if the most pressing administrative, financial, and societal barriers are addressed in a coordinated manner. The policy recommendations outlined in this brief provide a practical roadmap for unlocking this potential.

Key takeaways

- Cutting permitting times is essential to boost biogas deployment
- Public acceptance should be a prerequisite, not an afterthought
- Provide fair financing opportunities across the sector, especially for small-scale farms
- Support that continues beyond approval ensures projects succeed in the long run
- Strong feedstock partnerships mean stronger, more reliable plants
- Robust regulation can unlock the market potential of digestate and CO_2

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Appendix

The following pages include the individual policy briefs developed by each ALFA hub. These documents reflect the national perspectives and recommendations gathered through hub-level engagement. While they are presented separately here, their insights were consolidated to inform the common policy recommendations highlighted in the main body of this brief.

Policy Brief

Belgium

September 2025

Author
White Research (WR)

Context

Biogas production in Belgium is well developed, with nearly 200 installations across the country, mainly located in Flanders. The majority are agricultural units, often small-scale pocket digesters on dairy farms. While the technology is proven, the biogas sector still faces a number of structural challenges, particularly regarding authorisations, financial support, and trust in cooperative models. Regional differences (Flanders, Wallonia, Brussels) result in diverse approaches to support schemes and permitting frameworks.

Challenges and barriers

- Lengthy and complex authorisation procedures, especially in Flanders where policies about nitrogen limits creates difficulties in issuing permits for new plants.
- Reduction of green certificates in Wallonia in recent years leading to uncertainty.
- Financing difficulties for small and micro-digesters, with banks hesitant to support projects.
- Lack of trust and difficulties in setting up cooperation models among farmers.
- Negative perception and skepticism among farmers in Wallonia, where early projects were inefficient, causing long-term scepticism among farmers and financial institutions.

ALFA's Policy Recommendations

1. Simplify permitting procedures in Flanders, particularly for small-scale farms using their own feedstock and with low environmental impact.
2. Adapt the Walloon framework to better support pilot projects and simplify authorisation with a single contact point for farmers.
3. Provide tailored subsidies for small and mid-scale biomethane plants, beyond large industrial projects.
4. Strengthen advisory and information services to improve confidence among farmers and banks, especially in Wallonia.
5. Support the development of farmer cooperation models through facilitation and adapted financial instruments.

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Policy Brief

Denmark

September 2025

Author
Food and Bio Cluster Denmark (FBCD)

Context

Denmark has a long history of biogas development supported by regulation and subsidy schemes. Biogas production links energy generation with manure and organic waste treatment, with co-digestion widely used. Since 2012, upgrading to biomethane and injection into the natural gas grid has been possible, accelerating sector growth. In 2023, biogas covered 45% of Denmark's total gas consumption. While the sector has expanded rapidly, framework conditions remain decisive for future growth.

Challenges and barriers

- Very long processing times to obtain permits, with multiple approvals required for large installations.
- Local resistance to new plants due to odour and manure/feedstock transport concerns.
- Stagnation in sector growth in 2023 due to deteriorated framework conditions.
- Current development highly dependent on export market conditions.

ALFA's Policy Recommendations

1	Refund CO_2 levy for biogas, verified by origin guarantees.
2	Tighten CO_2 requirements for the transport sector beyond ETS2 quota, similar to Germany.
3	Enforce CO_2 displacement requirements for gas suppliers for heating, inspired by the Dutch model.
4	Implement climate footprint rules for transport infrastructure, like building regulations.
5	Introduce a minimum 50% deduction in CO_2 emissions for livestock manure digested in biogas facilities before levy determination.
6	Stop Evida's injection tariff proposal and replace with a green tariff model.
7	Halve biogas tender fund duration to 10 years, reduce subsidy reliance with origin guarantees, and bring forward last tenders to expire in 2026.

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ALFA

Policy recommendations to unlock biogas potential in livestock farming

Policy Brief

Italy

September 2025

Author
Azzero CO2 (A0CO2)

Context

Most Italian biogas plants have a capacity of 650 - 1000 kW, incentivised for 15 years. In recent years, focus has shifted from power generation to biomethane production, driven by FITs and CIC. About 85% of plants are located in the North, reflecting larger farm structures. Smaller farms in the South face greater barriers to investment. Local opposition also exists, particularly in Sardinia, where NIMBY resistance is strong. Support schemes include feed-in tariffs (FIT) for electricity and biomethane, as well as certificates (CIC) for biomethane used in the transport sector.

Challenges and barriers

- Expiring incentives after 15 years, creating profitability risks.
- Plant sizes make upgrading to biomethane challenging.
- High operation and maintenance (O&M) costs incompatible with electricity market conditions.
- Administrative bottlenecks: unpredictable timing of procedures (e.g. distributor's connection quotes).
- Regional barriers: strong NIMBY opposition in some regions. Regions can interfere/modify the authorisation process.

ALFA's Policy Recommendations

1	Establish deadlines to align administrative procedures with incentive schemes.
2	Shift from energy-only production to grid services, using anaerobic digesters as flexible storage and balancing tools.
3	Introduce conto capitale incentives for key equipment (e.g., electrolysers).
4	Harmonise biomethane rules and incentives with those for e-fuels, to enable biological conversion of green H_2 to biomethane in digesters.
5	Ensure new incentive schemes for continuity of operation in older plants (>15 years).
6	Introduce technical standards that allow reverse-flow in gas networks

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Policy Brief

Greece

September 2025

Author
Q-PLAN International (Q-PLAN)

Context

The Greek biogas-biomethane sector remains still underdeveloped despite policy/investment efforts made. 80 operational plants (mainly wastewater and agro-industrial), the livestock sector's role remains small. Biomethane upgrading is still scarce, hindered by high capital costs, complex permitting, limited technical know-how, lack of grid infrastructure, and the absence of a stable legal framework. In practice, there is no market to support the operation of an agricultural biomass supply chain.

Challenges and barriers

- High investment costs and financing difficulties, along with lengthy and complex permitting processes.
- Limited grid infrastructure for biomethane injection.
- Low awareness and weak synergies between livestock and energy actors.
- Lack of support schemes for the construction and operation of the biomethane plants.
- Limited feedstock mobilisation capacity.
- Declining farmer numbers and technical know-how gaps.
- Economic issues due to the existing electricity-based biogas plants.

ALFA's Policy Recommendations

1	Fast-track permitting for the upgrade process to centralise permits, land-use, and environmental assessments
2	Introduce digital permitting platforms with fast-track procedures for <1 MW projects.
3	Pre-identify "low-conflict" zones (e.g., livestock-dense regions) where permitting can be streamlined
4	Introduce biomethane support schemes such as CAPEX grants up to 40–60% for upgrading units and manure logistics
5	Develop manure logistics infrastructure
6	Promote regional manure management hubs with local authorities
7	Develop clear and supportive quality standards and specifications for grid injection

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Policy Brief

Spain

September 2025

Author
Sustainable Innovations (SIE)

Context

Spain has significant potential for biogas and biomethane due to abundant livestock waste (49 million tons annually) and agricultural residues (9 million tons). As of 2020, Spain had 146 biogas plants with an output of 2.7 TWh, concentrated mainly in Catalonia, Madrid, and Castilla y León. Biomethane production is still emerging, with only five plants operational in 2022. Despite this potential, the sector lags behind European counterparts, largely due to regulatory uncertainty, high upfront costs, and low awareness among farmers.

Challenges and barriers

- Complex and irregular authorisation processes.
- Lack of uniformity in permitting, making investment decisions difficult.
- High upfront investment costs, which farmers generally cannot afford.
- Regulatory uncertainty discouraging stakeholders from adopting biogas technologies.
- Awareness and knowledge gap: many new market entrants lack the required awareness, expertise and struggle with regulations.
- Unequal regional transportation of manure and grid connection. Digestate regulations prevent its valorisation as fertiliser, leading to undervaluation.

ALFA's Policy Recommendations

1. Streamline and standardise authorisation at the national level to replace the fragmented regional system. Ensure efficiency and clarity to avoid bottlenecks.
2. Introduce incentive schemes, particularly for farmers, to reduce investment barriers and increase participation in projects.
3. Develop training programmes for farmers and stakeholders, including awareness on digestate valorisation and environmental benefits.
4. Support small-scale biogas plants, linking them to larger infrastructure (e.g., grids) to facilitate market development.
5. Raise awareness in agricultural and livestock sectors to integrate biogas into broader renewable energy adoption.

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Policy Brief

Slovakia

September 2025

Author
PEDAL Consulting

Context

In Slovakia, the National Energy and Climate Plan sets a target of 25% RES in gross final energy consumption by 2030, with a binding biomethane target of 200 million m³/year (with an ambitious scenario of 300 million m³). Biogas plants are supported through feed-in tariffs for electricity and high-efficiency cogeneration, complemented by investment calls under the Recovery and Resilience Plan (RRP). The first biomethane plant was commissioned in 2022 in Jelšava, the second one in Velke Bierovce in 2025 with two more planned for 2025.

Challenges and barriers

- High investment costs and limited subsidies, creating financial risk and phase-out of the feed-in tariff scheme for electricity generation in upcoming 3 years.
- Unstable and uncertain policy environment.
- Complex and lengthy administrative and permitting processes.
- Restrictions and willingness of farmers on digestate use and transport.
- Lack of technical training and know-how among farmers and decision-makers.
- Low social acceptance, with odour and noise complaints.
- Uncertain biomethane price on markets, discouraging investment.

ALFA's Policy Recommendations

1	Simplify and shorten authorisation procedures, eliminating excessive bureaucracy.
2	Approve exceptions for storage of certain liquid by-products (high COD/BOD).
3	Valorise digestate as fertiliser to boost its commercialisation and use.
4	Adjust incentives for digestate and animal by-product processing.
5	Establish regional zones for biodegradable waste generation to reduce transport distances.
6	Introduce post-feed-in tariff support schemes to secure viability of existing plants.

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4. Outreach and stakeholder engagement

Preliminary versions of both the Policy Brief and the Replication Guide were developed in late August 2025 and shared with stakeholders during the ALFA final event and in the weeks that followed. This joint outreach allowed us to gather targeted feedback from several stakeholders. Additionally, the content of the Policy Brief was informed by the discussions held during both project activities and the final event, particularly the co-creation exercise and the policy roundtable.

To further structure the feedback collection process, WR prepared a Google form to disseminate the Replication Guide (a copy of the form is available in the Appendix II). The form was disseminated alongside the guide to collect insights from a wider range of stakeholders. The dissemination took place via: i) ALFA's final event, ii) ALFA's social media and website, and iii) direct emails by WR and consortium partners. Its purpose was to assess the perceived usefulness and relevance of the guide, its clarity and actionability, and the likelihood of stakeholders applying or sharing it within their professional networks. Respondents were also asked to indicate their professional background and whether their role involved supporting innovation uptake.

Overall, more than 400 stakeholders received the replication guide, and we collected 61 feedback responses via the G-Form. The feedback confirmed that the Replication Guide is seen as a clear and practical tool. Specifically, 56 of the respondents found the guide relevant to their professional contexts, and 58 of them indicated they would likely share it within their networks. Overall, almost all of the respondents (60 out of 61) found the guide actionable and clear.

Moreover, to reach a wider audience, the project consortium used a mix of communication channels. Updates, visuals, and highlights were shared through ALFA's LinkedIn account, contributing to broader visibility among the relevant communities. Consortium partners complemented this central communication effort by disseminating both materials through their own networks via social media posts and targeted emails to both national and EU stakeholders.

The following table presents the estimated number of stakeholders reached through email circulation, partner dissemination, and social media channels.

Table 1. Summary of the outreach achieved for the ALFA Policy Brief and Replication Guide

Channel	*Type of Activity*	*Estimated Reach / Recipients*	*Estimated Interactions*	*Main Target Audience*
Email outreach	Direct emails shared by ALFA consortium partners	> 500 recipients	-	Policymakers, Industry Stakeholders, Advisors, Associations, Researchers
Social media (ALFA accounts)	5 posts on ALFA's LinkedIn	2,897	119	Policymakers, National/EU Industry Stakeholders, Local Authorities, Researchers
Social media (partners' channels)	Partner-level dissemination of the Policy Brief and Replication Guide	Data not available	Data not available	
Direct feedback	Responses in the feedback g-form	>300	61	
ALFA's Final Event	Participants in ALFA's Final Event and Policy Roundtable	62	-	Policymakers, Industry Stakeholders, Advisors, Associations, Researchers
Total estimated reach				>3,500

5. Links to ALFA's Policy Brief and Replication Guide

- ALFA's Replication guide is available here.
- ALFA's Policy Brief is available here.

Appendix

I. Replication guide – Partners' input collection template

Replication guide templates

@All, please make sure to provide information in all of the following tables. Please make sure that your input is detailed, brief and accurate, strictly based on the project's outcomes (Kindly refer to the guidelines document for references to the relevant WPs/tasks.).

Support services delivery

Country	Support services						
	Nr. of supported cases	Types of biogas initiatives	Types of services delivered	Main stakeholders involved	Challenges and solutions	Lessons learned	Replication recommendations
BE	Provide the total number of projects you supported.	List the main categories of these biogas projects (e.g., farm-based biogas, biomethane production, etc.)	List the types of services you delivered.	Mention the key players involved during the services delivery.	List key barriers faced during the services delivery.	- What worked well? - What didn't? - What would you do differently?	Key takeaways for replication (please provide clear practical recommendations)

Non-technical support activities (Awareness-raising, Capacity-building & Mutual learning)

Country	Non-technical support activities		
	Challenges and solutions	Lessons learned	Replication recommendations
BE	List key barriers faced in engaging stakeholders (e.g., lack of interest, misconceptions, financial constraints) and how they were addressed.	- What worked well? - What didn't? - What would you do differently? - Please answer in terms of what satisfied their capacity-building needs and/or their support needs, as well as what engagement strategies proved more or less useful	Key takeaways for replication (please provide clear practical recommendations)

Summary of Replication potential

Country	Overall Replication potential			
	Key Success Factors	Challenges & Solutions	Scalability considerations	Replication Recommendations
BE	What made ALFA's approach work? (e.g., free expert support, tailored financing guidance, capacity-building, etc.).	What obstacles did you face, and how did you solve them (e.g. lack of stakeholder engagement)?	Discuss factors affecting the expansion of biogas projects (e.g., regulatory flexibility, cost-effectiveness, infrastructure development, etc.).	How can ALFA's model be refined for better results? (e.g., increasing outreach, offering follow-up services, etc). Feel free to share your ideas on how to scale and replicate ALFA's approach in different regions.

II. Replication guide – G-form

ALFA - Replication Guide Short Feedback Survey

This short survey (1–2 minutes) aims to understand whether the ALFA Replication Guide is useful for your work, and whether you'd intend to use it. Your feedback will directly contribute to evaluating the guide's impact and supporting future replication efforts in livestock-based biogas initiatives.

Please fill in the short form below and do not hesitate to let us know if you have any questions. For any questions, please contact White Research via Pol Camps (p.camps@white-research.eu)

Which of the following best describes your professional background? *

- ○ Innovation advisor
- ○ Researcher / academic
- ○ Agricultural / Biogas industry actor
- ○ Policy maker or local authority
- ○ Technology provider
- ○ Other: .....

Does your role involve supporting innovation uptake or the implementation of new solutions in the agricultural or energy sector? *

- ○ Yes, regularly
- ○ Occasionally
- ○ Rarely
- ○ No

How relevant is the ALFA Replication Guide to your work or professional context? *

- ○ Very relevant
- ○ Relevant
- ○ Somewhat relevant
- ○ Slightly relevant
- ○ Not relevant at all

In your professional role, how likely are you to make use of the ALFA Replication Guide in your work or share it within your network? *

- ○ Very likely
- ○ Likely
- ○ Neutral
- ○ Unlikely
- ○ Not applicable to my role

How clear and actionable are the recommendations presented in the guide? *

- ○ Very clear and actionable
- ○ Clear and somewhat actionable
- ○ Somewhat clear, but hard to act on
- ○ Unclear and not actionable
- ○ Not clear at all

E-mail *

Short answer text

Organisation *

Short answer text

Consent: By submitting this form, I agree that my responses may be used anonymously for internal reporting and improvement of the ALFA Replication Guide. Participation is voluntary, and no personal data will be published or shared externally. *

- ☐ I consent
- ☐ I do not consent

III. Policy recommendations – Partners' input collection template

Policy recommendations templates

@All, please make sure to provide information in all of the following tables. Please make sure that your input is detailed, elaborated and strictly based on the project's outcomes (Kindly refer to the guidelines document for references to the relevant WPs/tasks.). We highly recommend **utilising the desk research results from T1.1** as a basis, updating them where necessary.

National Policy Framework

Country	National Policy Framework			
	Key Regulations & Laws	Government Incentives & Subsidies	Permitting & Regulatory Requirements	Policy Priorities & Targets
BE	Outline the main national laws, directives, and policies governing biogas production and use in livestock farming. Note: including manure management/use regulations	List available financial support mechanisms, such as grants, feed-in tariffs, tax incentives, and subsidies for biogas adoption.	Briefly describe the approval process, licensing, and compliance requirements for biogas plant construction and operation.	Highlight national goals related to biogas, including renewable energy targets, emissions reduction plans, and circular economy initiatives.

Regional & Local Frameworks

Country	Regional & Local Frameworks		
	Regional Regulations & Incentives	Regional/Local Regulations/Initiatives (if relevant)	Challenges at Regional/Local Level
BE	Provide details on regional policies, subsidies, or incentives for biogas production and use. Note: including manure management/use regulations	Highlight regional/local regulations/initiatives supporting biogas adoption in livestock farming **(when relevant)**	Identify key barriers (e.g., regulatory hurdles, public resistance, lack of infrastructure, funding gaps) that impact biogas implementation in livestock farming at the regional and local levels.

Market Conditions

Country	Market Conditions		
	Market Readiness, Trends & Investments	Main challenges/barriers	Investment Opportunities
BE	Describe the current state of the biogas market, including production capacity, or growth trends, and major investments in the sector.	Identify key obstacles affecting the uptake of biogas in livestock farming (e.g. high costs, regulatory uncertainty, infrastructure limitations, etc).	Highlight potential areas for investment, including emerging technologies, or policy-driven incentives (e.g. agricultural waste valorisation or EU & national subsidies).

Best Practices & Lessons Learned

Note: @All, It is very important that you provide clear policy recommendations in the last column of the following table. These recommendations should be **directly relevant to your Hub** and based on the specific challenges/success factors encountered during ALFA's implementation.

Country	Best Practices & Lessons Learned		
	Success factors	Common needs and Challenges	**Recommendations**
BE	Outline key elements that contributed to successful biogas projects (e.g. strong policy support, effective financing models, innovative technologies, etc.).	Identify recurring obstacles faced by stakeholders (e.g., high investment costs, regulatory complexity, public acceptance issues).	Provide clear recommendations for policymakers for improving biogas adoption. **Please make sure that your recommendations are relevant to your Hub.**

IV. Policy recommendations – co-creation exercise guidelines

Room 1

Policy Incentives & Market Mechanisms

Session 1: Recommendations

Goal: Generate 4 solid policy recommendations

How you will work at the table:

- Stay with your group for the whole exercise (≈35 minutes).
- Assign 1-rapporteur for both sessions.
- Work through each sub-theme one by one (Simplification → New Instruments → Adoption Barriers → Equity → Risks).
- Use the post-its: Keep each idea short, specific, and actionable (1 idea per post-it).
- **By the end, develop at least 4 solid recommendations.**

Themes & guiding questions

1. **Simplification & de-risking**
   Which existing incentives could be simplified to make adoption easier and less-risky?
   Examples:
   → "Simplify CAP eco-scheme application steps"
   → "Introduce standard templates for biogas contracts"

2. **New instruments**
   What existing or new financial or market tools and services should be introduced for biogas in farming, and by whom?
   Examples:
   → "EU-level carbon credit for biogas"
   → "National contract-for-difference scheme"

3. **Equity**
   How to ensure fairness for small vs. large farms?
   Examples:
   → "Scaled incentives by farm size"
   → "Lower entry thresholds for small farms"

4. **Recommendations**

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Based on the barriers, tools, and solutions you have identified so far, develop at least 2 connected recommendations. Make sure that your recommendations address the following: Barrier / Problem → Policy Tool → Actor / Level → Effect.

Example: High upfront costs for farmers → Introduce public loan guarantees → Led by national governments → Banks lend more easily to small farms → Cap guarantees to avoid windfall gains for large farms.

At the end you should allocate Session's 1 recommendations to the respective timeline (Quick Wins vs. Long-term).

Session 2: Policy Backcasting

Session 1 told us what policies are needed. Session 2 will tell us when they must happen to reach Denmark's level. Together, we have a roadmap. The idea: Imagine the EU has reached Denmark's current level of biogas deployment by 2035. Work backwards with the Denmark success elements and your Session 1 recommendations to identify what actions are needed in 2025–2027 and 2028–2035.

In practice:

- Place your ideas on the timeline board (2025 - 2027 → 2028 - 2035) using color-coded post-its: green = incentives and market tools, blue = governance and regulation, yellow = public acceptance and trust
- Keep each idea short and concrete - 1 idea per post-it.

Guiding questions:

- Which ones could be quick wins (2025 - 2027)?
- Which require longer-term reforms (2028 - 2035)?
- Looking at Denmark's pathway and your Session 1 recommendations, what additional measures would the EU need to succeed that Denmark did not have to implement?
- In the reporting template, make sure to also report DK's elements that may not be replicable EU-wide.

Incentives and Market Mechanisms	→ Feed-in tariffs / premiums → Investment subsidies and grants → Co-operative farming and biomethane models → Biomethane injection & upgrading subsidies → Competitive tenders for state aid for upgraded biogas and other gasses
Governance & Regulation	→ Central authority designing and administering support schemes (Danish Energy Agency) → Standardised permitting and safety rules (Gas Supply Act) → National biogas strategy aligned with EU RED targets
Public Acceptance & Trust	→ Demonstration plants

IV. Policy recommendations – table boards

Session 1			Room 1
Regulatory simplification	Policy & market instruments	Inclusion & fairness	Recommendations

Session 2	
2025 – 2027 (Quick-wins)	2028 – 2035 (Long-term)

Session 1			Room 2
Permitting simplification	Governance	Public trust	Recommendations

Session 2	
2025 – 2027 (Quick-wins)	2028 – 2035 (Long-term)

V. Policy co-creation exercise – reporting template

Reporting template

Room: ☐ Incentives & Market Mechanisms ☐ Governance, Regulation & Public Acceptance

Table number: _____

Rapporteur: _____

Quick Wins (2025 - 2027) List the most urgent measures needed now.

Session 1 recommendations: _____

_____

_____

DK's replicable elements: _____

_____

_____

DK's non-replicable elements[1]: _____

_____

_____

Longer-Term Reforms (2028 - 2035) List the structural reforms that take more time.

Session 1 recommendations: _____

_____

_____

DK's replicable elements: _____

_____

_____

DK's non-replicable elements: _____

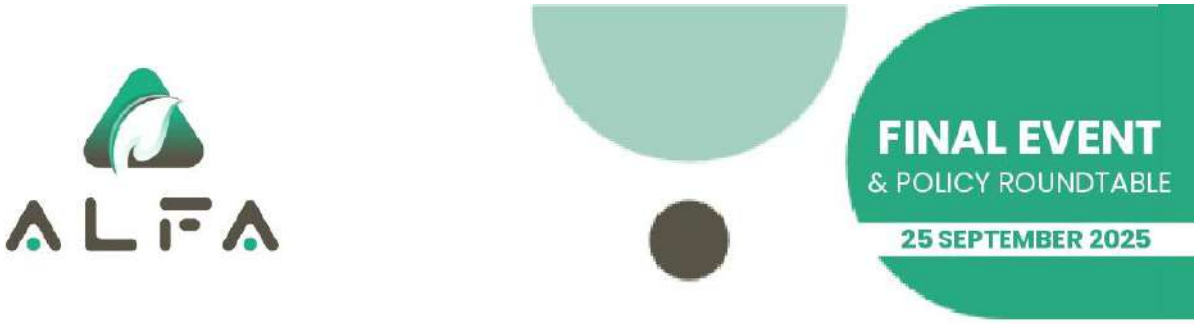
_____

[1] Elements that could hardly be replicated either in your region or EU-wide due to contextual limitations.

Roadmap highlights: Each table should agree on 3 - 4 priority actions across the timeline to report back.

1. _____
2. _____
3. _____
4. _____

VI. Policy roundtable – guiding questions



ALFA's Policy Roundtable:

Panel discussion

Welcome note

Dear Panelist,

Thank you once again for your interest in participating in ALFA's Policy Roundtable. This session will bring together policymakers, industry leaders, and experts, to validate ALFA's findings and place them against broader perspectives and ensure their relevance at the EU level.

To support your preparation, we are pleased to share some reference, time-permitting questions that will frame our discussion. Since time will be limited, with each of you having approx. 10 minutes, we'd like you to let us know which topic(s) from the ones identified you'd most like to focus on, based on your expertise or interest.

Reference questions for the panel discussion

1. Biogas in the bigger picture

What makes manure-based biogas particularly challenging compared to other renewable energy pathways?

Potential follow-up questions: Do you see potential for EU-level instruments (e.g., similar to renewable hydrogen) specifically targeted at livestock-based biogas/biomethane? Are there lessons from other renewable sectors (e.g., solar, wind, hydrogen) that could be transferred to biogas and biomethane?

2. Cross-sector integration

Beyond energy, biogas also links to agriculture, waste management, and circular economy. How can policies better reflect this cross-sectoral value? Is there a risk that biogas gets overlooked because of the political momentum behind biomethane, and if yes, how can we avoid this?

3. Access to finance

Evidence from ALFA shows that small-scale and cooperative projects are under-served from most financial schemes, which favour large industrial units. Do current financing schemes unintentionally discriminate against small-scale and cooperative projects? And if so, how can funding frameworks be redesigned so that small-scale and cooperative biogas projects are not left behind compared to large industrial players?

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FINAL EVENT
& POLICY ROUNDTABLE
25 SEPTEMBER 2025

4. By-products valorisation

ALFA highlights uncertainty around digestate and CO_2 regulations as a missed opportunity for added value. Do you agree that establishing clear and harmonised rules should be an EU-level priority? What incentives could accelerate the development of secondary markets for digestate and captured CO_2, turning waste streams into reliable revenue?

5. Advisory

ALFA findings show that many farmers often lack the advisory support needed to develop viable biogas projects. What do you believe should be the role of EU policymakers in addressing this gap? And beyond the EU level, how can national governments, cooperatives, or industry associations contribute to building this critical capacity on the ground?

6. Social acceptance

Despite clear environmental and socio-economic benefits, biogas projects often face strong local opposition. Do you think current EU and national policies sufficiently account for the social dimension of biogas deployment, or are we still treating acceptance as an afterthought?

Potential follow-up question: What role should communities and farmers themselves play in shaping biogas projects to avoid opposition and instead create shared ownership?

7. Closing reflections

Among the many recommendations discussed today, which one should policymakers prioritise first to ensure faster deployment of biogas in livestock farming?

8. Other questions (if time allows)

i) Based on ALFA's findings, fragmented permitting rules create uncertainty for biogas developers in many member states. Looking ahead to 2030, should the EU push for harmonised standards, or is this best resolved at national and regional levels? ii) Denmark combines supportive policies, farmer engagement, and grid integration. Which of these elements do you see as most critical for replication elsewhere?, iii) Denmark is already far advanced in biogas deployment. What do you see as the next frontier, and what lessons should Europe take from Denmark's future direction?

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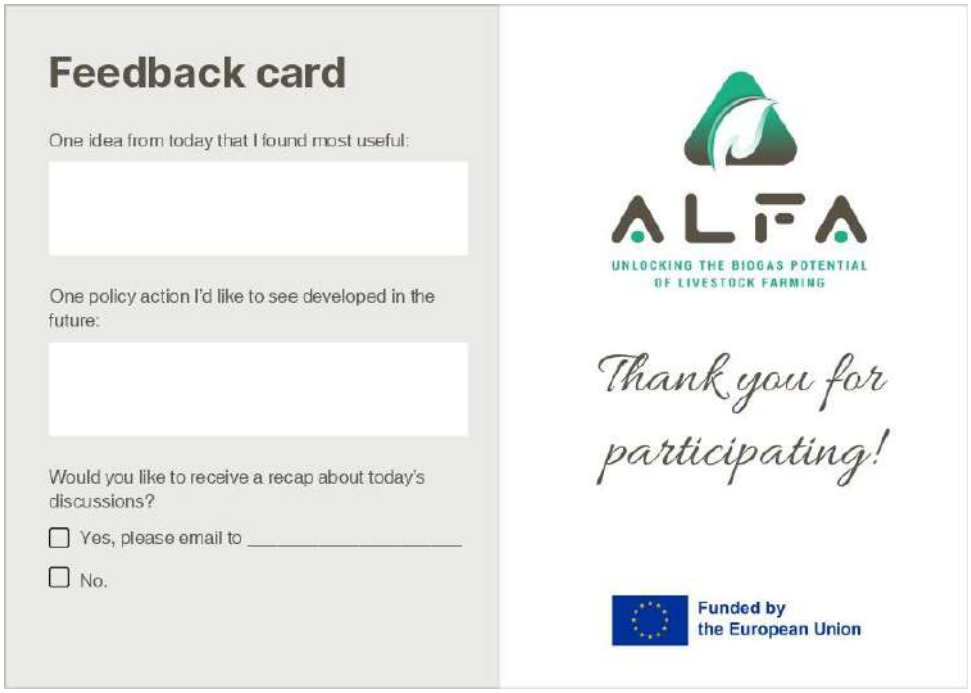
VII. Policy roundtable – feedback card



Feedback card

One idea from today that I found most useful:

One policy action I'd like to see developed in the future:

Would you like to receive a recap about today's discussions?

☐ Yes, please email to _____

☐ No.

ALFA

UNLOCKING THE BIOGAS POTENTIAL OF LIVESTOCK FARMING

Thank you for participating!

Funded by the European Union

The project

ALFA has the objective to help unlock the EU's biogas production potential by fostering the adoption of technologies using manure to produce biogas, thus helping increase the adoption of renewable energy sources in the EU and helping reduce emissions from untreated animal waste. The project will identify drivers and barriers for the uptake of biogas in the EU livestock farming industry and will support farmers from 6 EU countries (Italy, Denmark, Belgium, Slovakia, Greece and Spain) through its own co-created solutions, including financial, business, and technical support services as well as capacity-building seminars. In parallel, the project will develop an Engagement Platform to host tools that facilitate collaboration and knowledge exchange among industry actors and provide credible estimations of each farm's biogas potential, prospect profits, and environmental and social impacts. Moreover, ALFA will inform all relevant stakeholders via awareness-raising campaigns and policy recommendations, and will provide guidelines for replication of its results in other regions.

Coordinator: **Q-PLAN**

PARTNER		SHORT NAME
Q-PLAN INTERNATIONAL	Q-PLAN INTERNATIONAL ADVISORS PC	QPL
APRE	AGENZIA PER LA PROMOZIONE DELLA RICERCA EUROPEA	APRE
AzzeroCO2 climate in our hands	AZZERO CO2 SRL	A0CO2
CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS	CENTRE FOR RESEARCH & TECHNOLOGY HELLAS	CERTH
Food & Bio Cluster Denmark	FBCD AS	FBCD
Sustainable INNOVATIONS	SUSTAINABLE INNOVATIONS EUROPE SL	SIE
WHITE	WHITE RESEARCH SRL	WR
PEDAL CONSULTING	PEDAL CONSULTING SRO	PED
EUROPEAN DAIRY FARMERS	EUROPEAN DAIRY FARMERS E.V.	EDF
EBA European Biogas Association	EUROPEAN BIOGAS ASSOCIATION AISBL	EBA

CONTACT US: info@alfa-res.eu **VISIT: www.alfa-res.eu**