ALFA

Replication Guide

Unlocking the biogas potential of livestock farming

AUGUST 2025

Q-PLAN INTERNATIONAL

EBA European Biogas Association

CERTH CENTRE FOR RESEARCH & TECHNOLOGY HELLAS

Food & Bio Cluster Denmark

AzzeroCO2 climate in our hands

APRE Agenzia per la Promozione della Ricerca Europea

Sustainable INNOVATIONS

WHITE RESEARCH

EUROPEAN DAIRY FARMERS

PEDAL CONSULTING

Funded by the European Union

Replication Guide to Unlock the Biogas Potential of European Livestock Farming

AUGUST 2025

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?

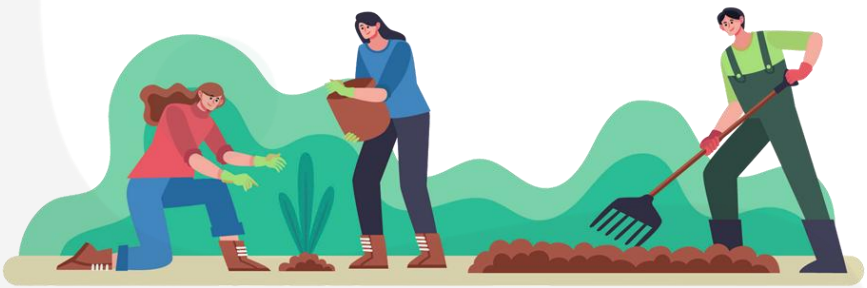
"Farms can fuel the future."

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.

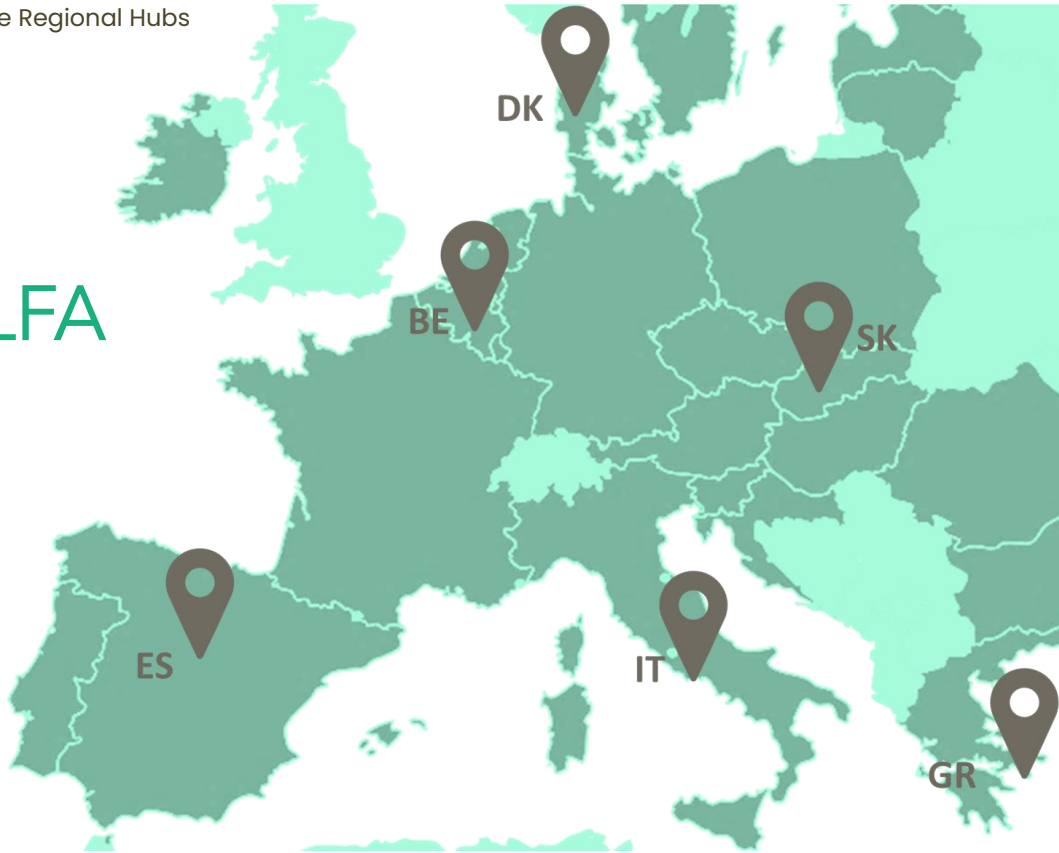
Providing grid support services: CHP units can offer flexibility services like frequency regulation or peak shaving, creating additional revenue as energy markets value dispatchable renewables.

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

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.

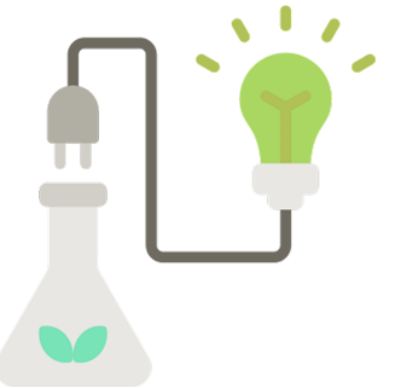
Spain offers large potential thanks to its extensive gas network and strong livestock sector, but unstable regulatory frameworks and lacks support scheme.

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.

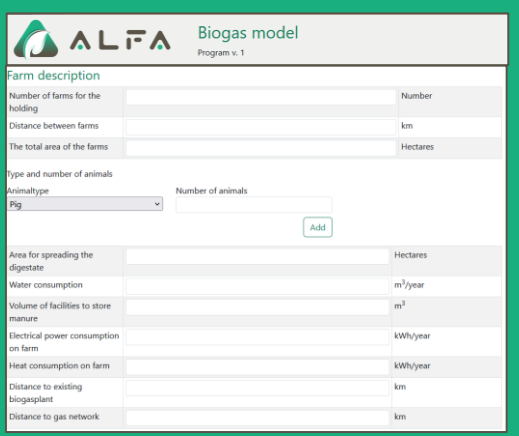
ALFA Tools and Services

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

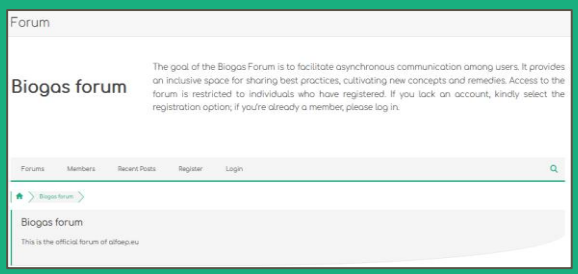
The DST currently provides calculations based on four main categories of biomass: livestock manure, crops, residual products, and industrial by-products. Users can refine default values with their own data if they have more accurate information. This flexibility allows for more tailored and credible 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.

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.

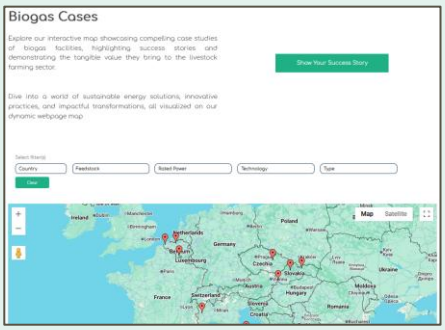
Atlas Map

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.

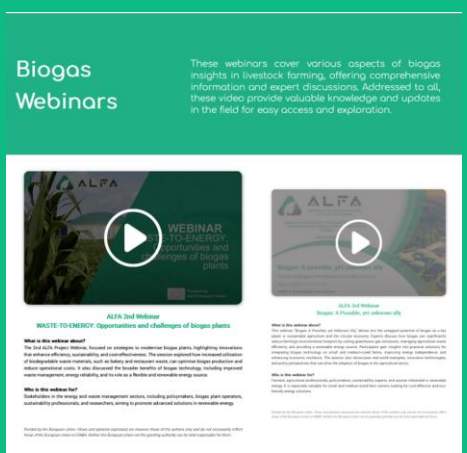
The Atlas Map on the ALFA Engagement Platform is a visual database of real-world biogas installations implemented by livestock farms across Europe. Each entry on the map highlights key information about a specific case, such as the type of biomass used, the scale of the installation, and the main outcomes 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.

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

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:

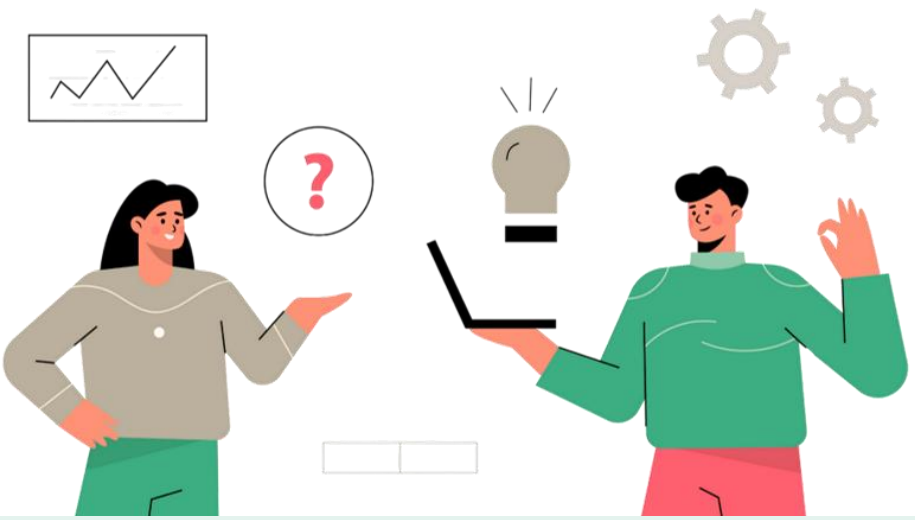
  - Define a clear plan for service delivery (who provides what, when, and how). **This is particularly important in cases where more than one project partners should deliver a service/set of services**.
  - **Maintain regular contact with the beneficiary** throughout the process.

- **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

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.

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

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

Adapt

Deliver your support services (First round)

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

Replicate

Ensure sustainability and wider adoption of results

References

ALFA Deliverables:

- E.G. Facci (A0CO2), 2023. D1.1 Framework and value chain conditions affecting biogas uptake in livestock farming
- Camps Arago P. et al. (WR), 2023. D1.2 Perceptions, acceptance levels and needs on biogas
- Sebastiani C. (SIE), 2023, D1.3 Case studies of livestock farms leading biogas uptake
- Balla C. et al. (Q-PLAN), 2023. D2.1 ALFA Hubs Operational Plan and Activities
- Camps P. et al. (WR), Kalaouzi A. et al. (Q-PLAN), Druskova S. (PEDAL), Rocca F. (APRE), Facci E. (A0CO2), Stockler M. (FBCD), 2023. D2.2 Co-creation outcomes shaped to our stakeholder needs
- Stockler M. (FBCD), 2023. D2.3 ALFA Support tools
- SIE & APRE, 2024. D2.5 Alfa Market Uptake Support Measures – Interim Version
- Stockler M. (FBCD), Konstas I. et al. (Q-PLAN), 2025. D2.6 ALFA Support tools – Final Version
- Sebastiani C. et al. (SIE), 2025. D2.7 Alfa Market Uptake Support Measures – Final Version
- APRE, Q-PLAN, FBCD, CERTH, SIE, PEDAL, 2024. D3.2 Report on deployment of ALFA Support Measures – First Round
- Konstas I. et al. (Q-PLAN), 2024. D3.3 ALFA Operational Plans for the deployment of support services – Final Version
- APRE, Q-PLAN, FBCD, CERTH, SIE, PEDAL, EDF, A0CO2, WR, 2025. D3.4 Report on deployment of ALFA Support Measures – Second Round
- Konstas I. et al. (Q-PLAN), 2024. D4.1 Report on evaluation of market uptake support measures – First Round
- Konstas I. et al. (Q-PLAN), 2025. D4.2 Report on evaluation of market uptake support measures – Second Round

Lukehurst, Clare T., and Angela Bywater. 2015. Exploring the Viability of Small Scale Anaerobic Digesters in Livestock Farming. IEA Bioenergy Task 37. Available here.

McCabe, Brendan K., Jerry D. Murphy, David Styles, et al. 2020. Integration of Anaerobic Digestion into Farming Systems. IEA Bioenergy. Available here.

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.

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