Ref. Ares(2025)6245207 - 31/07/2025

Final report on co-creation actions in the 7 target countries.

Deliverable 3.4

GREENMEUP

Funded by
the European Union

Document control sheet

Project	GreenMeUp - Green biomethane market uptake
Call identifier	HORIZON-CL5-2021-D3-02: Sustainability and educational aspects for renewable energy and renewable fuel technologies
Grant Agreement n°	101075676
Coordinator	CRES - Centre for renewable energy sources and saving foundation
Work package n°	WP3
Work package title	Stakeholders´ engagement
Work package Leader	DBFZ - Deutsches Biomasseforschungszentrum gemeinnützige GmbH
Document title	D3.4: Final report on co-creation action in the 7 target countries.
Authors	Laura García Laverde (DBFZ), Ronja Wollnik (DBFZ), Jennifer Juch (DBFZ), Fabian Riedel (DBFZ), Vojtěch Pospíšil (CZ Biom), Adam Moravec (CZ Biom), Magdalena Rogulska (PIGEOR), Klaudia Juga (PIGEOR), Lauri Jasmin (EstBA), Ahto Oja (EstBA), Baiba Brice (LBA), Kristine Vegere (LBA), Ana Aligrudic (INCE), Peter Canciani (INCE), David Fernández (AEBIG), Myrsini Christou (CRES), Christos Zafiris (CRES), Christos Tourkolias (CRES), Spyridon Karytsas (CRES).

This project has received funding from the European Union's Horizon Europe Research and Innovation Programme under Grant Agreement No. 101075676.

Reference period	01/02/2024 – 31/07/2025
Due date	31/07/2025

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Executive Summary

The GreenMeUp project aims to promote the market introduction of biomethane as part of the efforts to reduce fossil fuel dependency in the EU and to contribute to the implementation of the REPowerEU plan. Projects efforts are focused on a selection of EU countries with high potential for biogas and biomethane production, selected at project conception and defined as target countries, including the Czech Republic, Estonia, Latvia, Greece, Poland, Spain and the Danube region (comprising Romania, Serbia and Hungary). Within each target country, this ambitious objective entails analysing the status quo of biomethane, identifying possible barriers and proposing necessary solutions and measures (political, technological, social) to facilitate its market development in the coming years.

The GreenMeUp project aims to support the wider market uptake of biomethane at European level. In particular, in the seven target countries participating in the project. To this end, one of the strategic fronts is the engagement of key stakeholders in the integration of biomethane in the energy and transport sectors, including market players along the value chains, as well as policy and societal actors. Stakeholders´ engagement in national hubs is a multi-actor approach that sustains the detailed analysis of each country´s biomethane framework conditions and current and future market opportunities. It also serves as a participatory platform for integrating stakeholder views and expert knowledge into the project.

This report details the second half of co-creation actions of the seven target countries between May 2024 and July 2025. In this context, three workshops have been carried out in cooperation with the GreenMeUp Hubs regarding future policy interventions, market integration indicators, and strategic actions to co-create the market uptake of biomethane.

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1 Introduction

During the first year of the GreenMeUp project, as a strategy for stakeholder engagement, the policy, market and society Hubs were established in target countries. Two main co-creation activities were priority during this project period, namely the identification of hubs needs and structures and the analysis of influencing and hindering factors to country biomethane market. In deliverable 3.2 the advance on co-creation actions carried out by the Hubs and key findings that will guide the subsequent actions in WP3 and engagement of stakeholders in each of country were being presented.

This deliverable reports the final co-creation actions of the seven target countries. In this context, three workshops have been carried out in cooperation with the GreenMeUp Hubs regarding future policy interventions, market integration indicators and strategic actions to co-create the market uptake of biomethane.

These activities align with the main objectives of the GreenMeUp Hubs, as mentioned in Deliverable 3.1, in that they support the multi-actor platform for policy, market and society actors to contribute to the analysis of national biomethane market and give feedback about existing and potential development framework. In sharing opinions and expertise on the current national biomethane status-quo´s situation and its potential development, trust relationships are created and understanding of different perspectives arises. Including those representing societal needs through civil society representatives and regional farmers involved in the Hubs.

This deliverable reports the main results of Task 3.2 that have been developed throughout the 4th, 5th and 6th workshop that were conducted between May 2024 and July 2025. The workshops were conducted in each GreenMeUp target country in cooperation with the Hubs:

- Workshop 4 focused on identifying **future policy interventions** to promote biomethane market uptake by engaging stakeholders in presentations and open discussions, with a particular emphasis on exploring value chains and untapped market opportunities.
- Workshop 5 analyzed key **market integration indicators** and recent developments through guided discussions, aiming to assess national potentials and foster stronger coordination among stakeholders to accelerate biomethane deployment.
- Workshop 6 served as the **final synthesis** meeting, merging past results and recent legislative updates to formulate strategic actions and strengthen cross-country cooperation for effective biomethane market development across GreenMeUp target countries.

As shown in the figure below, these three workshops form the concluding activities with stakeholders as planned in Task 3.2. Especially workshop 6 can be seen as a conclusive event for WP3.

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Jan - Feb 2023	1st Meeting: first approach to stakeholders
April 2023	2nd Meeting: Hub Kick-off & analysis of needed policy interventions
Nov. 2023	3rd Meeting: PESTEL Workshop
May 2024	4th Meeting: Future policy interventions
Nov. 2024	5th Meeting: Market integration indicators
May 2025	Final workshop

Figure 1. Stakeholder engagement activities in the GreenMeUp Project.

The following chapter will detail the applied methodologies (Chapter 2). A summary of the results of workshops in the target countries is presented, with mention of the most common hindering factors, as well as their co-created solutions (Chapter 3). Concluding remarks are given (Chapter 4). Finally, the Annex contains detailed descriptions of all workshops for all target countries.

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2 Background and methodological approach

The workshops employed a variety of methods tailored to the specific contexts and needs of each target country. Not every method was applied uniformly across all countries, reflecting the diverse approaches to stakeholder engagement and policy discussions within the biomethane sector. Table 1 gives an overview of the objectives and methods most commonly connected to workshops 4, 5, and 6.

Table 1: Overview of workshop objectives and methods for the Hub workshops 4, 5, and 6

Workshop	Objective	Method
Workshop 4: future policy interventions	• Present biomethane market status and key obstacles • Facilitate stakeholder dialogue for policy and market development • Share best practices and validate SWOT and FCM results	• Presentation combined with open discussion using Slido • Stakeholder engagement through moderated Q&A
Workshop 5: market integration indicators and regulatory gaps	• Identify obstacles and regulatory gaps hindering development • Foster regional cooperation and knowledge exchange	• Guided discussion with equal opportunity for participant input • Open discussion and brainstorming sessions • Q&A and interactive exchanges for feedback collection
Workshop 6: final results	• Discuss legislative developments and support mechanisms • Identify barriers and collect expert suggestions • Strengthen collaboration and update on EU policy trends	• Lecture format with discussion and interactive Miro board session • Presentations on technical, legal, and market topics • Open dialogue and brainstorming

2.1 Workshop 4: Future policy interventions

The fourth set of workshops focused on identifying future policy interventions to enable successful biomethane market uptake in each target country. Building on the identification of influencing and hindering factors in previous sessions, such as those explored with the PESTEL method, this workshop combined presentations with guided discussions to actively engage a diverse group of stakeholders including policymakers, industry representatives, researchers, and technical experts. Key topics presented included the current status of the biomethane market, results from the SWOT analysis, and the Fuzzy Cognitive Mapping (FCM) methodology, which together provided a comprehensive and data-driven foundation for strategic planning.

These methods were purposefully chosen to foster balanced information exchange, enabling heterogeneous stakeholder groups to understand complex content, contribute insights, and collaboratively shape actionable strategies. The workshop format encouraged interactive dialogue and co-creation, facilitating consensus-building and collaborative problem-solving around national market barriers, regulatory gaps, and investment

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needs. Participants validated key findings, shared best practices from more mature biomethane markets, and discussed necessary policy tools and regulatory pathways.

Expected outcomes included a clearer identification of obstacles and opportunities for biomethane development, concrete recommendations for policy and market measures, and strengthened networks among key market actors. The event also aimed to enhance cross-border cooperation and knowledge transfer, aligning national strategies with broader EU climate and circular economy goals. Overall, Workshop 4 provided valuable input to guide future interventions and support a coordinated, stakeholder-driven approach to biomethane market growth.

2.2 Workshop 5: Market integration indicators

The fifth set of workshops aimed to summarize recent achievements in the biomethane sector and identify ongoing obstacles hindering its development at the national and regional levels. Using guided and open discussions, each participant was given the opportunity to express their views, ensuring a comprehensive stakeholder dialogue. Key topics included updated biomethane production potentials for 2030 and 2050, new plant developments, feedstock availability, supporting policies, and emerging technologies. Presentations of recent studies and market data were complemented by exchanges on regulatory challenges, economic feasibility, and the role of guarantees of origin and the EU Gas Package in facilitating market growth.

The event sought to foster stronger coordination and collaboration among stakeholders across sectors and borders, emphasizing the importance of synergies between policymakers, industry actors, and research institutions. The workshops also provided a platform for sharing best practices and lessons learned from neighbouring countries and EU-level initiatives, enhancing knowledge transfer. Expected outcomes included clearer identification of critical weak points and lobbying priorities, improved alignment on strategic market development, and strengthened stakeholder engagement. Ultimately, the workshops contributed to the formulation of more informed, evidence-based biomethane strategies and regulatory frameworks tailored to national contexts, while reinforcing the GreenMeUp project's impact on policy and market integration.

2.3 Workshop 6: Final results from target countries

The sixth workshop employed a lecture format complemented by open discussions and an interactive Miro board session to engage stakeholders from across the biomethane value chain. The event focused on current legislative developments, including upcoming changes to operational support systems such as auctions, guarantees of origin for off-grid biomethane solutions, and the evolving balance between biomethane and electricity production from biogas. Participants included experts, government officials, and industry representatives who shared insights on policy updates, national action plans, and regulatory challenges in countries like the Czech Republic, Hungary, Estonia, Latvia, Poland, and Serbia.

The workshop aimed to gather expert opinions on key barriers and system shortcomings, generating concrete suggestions for improving support mechanisms, certification frameworks, and investment incentives. A major objective was to update participants on the latest European and national biomethane market trends, including technical, legal, and sustainability aspects—highlighted through presentations on topics such as digestate regulation, biogas roadmaps, and hydrogen projects. Expected outcomes included refined input for final GreenMeUp project deliverables, strengthened stakeholder cooperation, and enhanced alignment of

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policy and market strategies. The event also reinforced the importance of continued Hub meetings beyond the project's lifespan to sustain information exchange and promote cross-sector collaboration. Ultimately, this workshop contributed to consolidating national efforts within the wider EU biomethane agenda and bolstered the impact of GreenMeUp's results on legislative and market frameworks.

3 Target country workshop results on co-creation actions in the 7 target countries

The following chapter gives an overview of all workshops conducted in all target countries. For each country, key takeaways are identified. Detailed descriptions of all workshops can be found in the Annex.

3.1 Stakeholder Hubs in Czech Republic

Key takeaways

- Biomethane development in the Czech Republic is constrained by policy fragmentation and unclear strategic direction: Stakeholders consistently pointed to the lack of a national development plan, delays in updating the National Energy Concept, and limited institutional awareness as major barriers. Better coordination across ministries is urgently needed to align national policy with EU climate and energy targets.
- Economic and regulatory conditions must be improved to attract investment: Workshops highlighted the need for enhanced operational support, a reliable auction system, and transparent rules for guarantees of origin—particularly for off-grid solutions. Investors remain cautious due to unclear indexation mechanisms and unpredictable support schemes.
- Biomethane is gaining visibility as a strategic decarbonisation tool, especially in transport: With growing stakeholder engagement and public attention—bolstered by media coverage and project promotion—there is momentum to position biomethane as a flexible, climate-friendly alternative to electricity in specific sectors. Clear policy signals and stable financing mechanisms will be critical to translating this potential into deployment.

3.1.1 4th Workshop

On 28 May 2024, a workshop was held at the Allvet Hotel in Drnovice, Czech Republic, with over 20 participants, to discuss the current state of, and future developments in, the biomethane market. The event featured presentations and an open discussion facilitated by Slido, with the aim of identifying key barriers to growth in the sector and formulating improvement strategies. Topics covered included the development of the GreenMeUp project, SWOT analysis and the results of the FCM analysis, as well as economic barriers to biomethane development, particularly the need for improved operational and investment support in the Czech Republic. The workshop concluded with a consensus that support models need to be adjusted to ensure the sector's long-term stability. The next steps for the association were then planned based on the feedback received.

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3.1.2 5th Workshop

The fifth workshop, held on 15 October 2024, brought together 42 participants for a guided discussion on the annual achievements and challenges of biomethane in the Czech Republic. The event aimed to summarise progress in terms of new plants, production potential and government support, while also identifying obstacles hindering further development. Key discussions focused on legislative barriers, such as the absence of a strategic development plan, an incomplete National Energy Concept and a lack of awareness among government authorities. Additionally, poor coordination between ministries and the complexity of European regulations were identified as challenges. The workshop successfully raised awareness and drew media attention, including a press conference by CZ Biom which further promoted the importance of biomethane.

3.1.3 6th Workshop

The sixth workshop, held on 20 May 2025 at Hotel Tři Věžičky with 180 participants, focused on legislative changes in the Czech Republic's biomethane sector. It aimed to discuss upcoming changes to operational support through an auction system, the challenges associated with guarantees of origin for off-grid biomethane solutions and the future of biomethane versus electricity production. Key discussions included the potential for greater transparency within the auction model, the necessity of a functional off-grid biomethane recognition system and the financial uncertainty caused by the absence of a fixed indexation mechanism for support. Participants debated the trade-offs between electricity and biomethane production, emphasising the flexibility and decarbonisation potential of biomethane in transport. The workshop successfully linked the findings of the GreenMeUp project with current legislative efforts, raising awareness of the need for systemic changes and improving investment incentives to encourage wider adoption of biomethane.

3.2 Stakeholder Hubs in the Danube Region

Key takeaways

- Harmonized policies and regulatory frameworks are essential to unlock biomethane potential across the Danube region: Participants highlighted the need for more aligned legal frameworks at national and EU levels, including clear rules on digestate use, guarantees of origin, and integration with the EU Gas Package to create a stable investment environment.
- Cross-border cooperation and knowledge sharing are key drivers for regional biomethane market development: The workshops fostered collaboration between Serbia, Hungary, Romania, and other countries, promoting best practices such as the Danish biogas model and emphasizing multi-stakeholder engagement to support cohesive regional strategies aligned with EU targets.
- Targeted support for emerging sectors like transport and community-level projects can accelerate biomethane uptake: Discussions underscored the transport sector as a promising market for biomethane, with calls for dedicated incentives and improved emissions certification, alongside local production that reflects regional capacities and societal values, ensuring sustainable and accepted growth.

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3.2.1 4th Workshop: Danube Biomethane Hub - 4th meeting

The fourth Danube Biomethane Hub meeting was held online on 19 June 2024 with 38 participants. The event aimed to promote biomethane and biogas technologies in Serbia, Hungary and Romania. The event focused on the challenges and opportunities surrounding the adoption of biomethane in the Danube region. It presented the findings of a regional SWOT analysis and introduced the Fuzzy Cognitive Mapping (FCM) process for participatory modelling. Key discussions included using the Danish biogas model as a best practice reference for regional development, the regulatory challenges surrounding digestate use, and the need for more harmonised legal frameworks across the EU. The workshop strengthened cross-border cooperation and identified market-enabling conditions, fostering mutual learning among stakeholders. It also paved the way for future policy-oriented modelling, thereby increasing the likelihood that GreenMeUp's findings will influence national biomethane strategies.

3.2.2 5th Workshop: Danube Biomethane Hub – 5th meeting

The fifth Danube Biomethane Hub meeting was held online on 16 December 2024. With 24 participants, the meeting aimed to foster collaboration and coordination among key stakeholders in the biomethane and biogas sectors across the Danube region. The event focused on assessing national biomethane production potential by 2030 and 2050, with discussions on feedstock sources, regulatory gaps and economic feasibility. Key topics included the need for updated regulatory frameworks, the issuance of guarantees of origin and the upcoming EU Gas Package, which were identified as opportunities to support market growth. The workshop also emphasised the importance of cross-border cooperation, sharing best practices and aligning national strategies with broader EU targets. Stakeholders discussed the need for sustained multi-stakeholder hub meetings after the project ends, and they expressed their support for further collaboration to influence EU policy and strengthen regional efforts.

3.2.3 6th Workshop: Danube Biomethane Hub – 6th meeting

The 6th Danube Biomethane Hub meeting was held online on 22 May 2025 with 21 participants. The meeting focused on refining project deliverables, exploring future cooperation opportunities and strengthening collaboration to support the uptake of the biomethane market. Key discussions centred on recent policy updates, including Hungary's Biogas Action Plan and Serbia’s extended feed-in tariff contracts, as well as the challenges associated with emissions measurement and certification. Stakeholders emphasised the importance of clear and stable policies, such as guarantees of origin and carbon market integration, to stimulate investment. The transport sector was identified as a promising area for biomethane deployment, with calls for targeted incentives and cross-sector cooperation. Participants also emphasised the importance of local production, community integration and aligning projects with regional capacities and societal values. The session concluded with a focus on continuing collaboration beyond the project lifecycle, as well as on the necessity of national-level support to accelerate biomethane adoption.

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3.3 Stakeholder Hubs in Estonia

Key takeaways

- Advancing regulatory alignment and certification is critical to unlock biomethane growth: Stakeholders emphasized the need to revise digestate classification and certification processes to better reflect its value as a natural fertiliser, simplify regulatory requirements, and harmonize with EU fertiliser regulations to support sector expansion and circular economy goals.
- Diversifying sustainable feedstocks and prioritizing local biomethane use strengthens sector sustainability: Discussions focused on exploring new feedstock sources like food industry waste, wetlands biomass, and power-to-gas solutions, alongside advocating for locally produced biomethane to be recognised as a negative emission fuel, especially in heavy transport and maritime sectors.
- Strategic planning and innovation drive Estonia's biomethane roadmap and sector future: The presentation and review of the Biogas Roadmap 2035, combined with updates on support schemes for grid injection, emerging vehicle technologies (CNG/LNG), and digestate valorisation, highlighted Estonia's commitment to integrating biomethane with hydrogen developments and broader climate policies.

3.3.1 4th Workshop: 4th Estonian Hub meeting

The 4th Estonian Hub meeting, organised by the Estonian Biogas Association and held on 13 June 2024, brought together 16 participants, including government officials, industry representatives and researchers. The agenda included a visit to the latest biogas plant in Ebavere, followed by a conference centred on SWOT analysis and the ongoing 'Biogas Sustainability Study'. Key discussions included identifying additional sustainable feedstocks, such as food industry waste, biomass from wetlands and nature reserves, and power-to-gas solutions. Stakeholders also discussed how to calculate guarantees of origin for biomethane, suggesting that locally produced biomethane should be prioritised as a negative emission fuel. Another key topic was the consumption of biomethane, with a focus on its potential in public transport, heavy road transport and the maritime sector. The meeting emphasised the importance of providing input to the sustainability study to ensure accurate findings, while also reviewing the SWOT-TOWS analysis and suggesting improvements to future strategies for the Estonian biogas sector.

3.3.2 5th Workshop: Biogas Digestate and biogas Roadmap 2035 - Estonia GreenMeUp Stakeholder Hubs Workshop

The fifth workshop of the Estonian GreenMeUp Biomethane Hub, held online on 21 November 2024, brought together 28 participants for a brainstorming session centred on biogas digestate and biogas roadmaps. The workshop addressed the regulatory challenges associated with digestate, such as its classification as waste despite its recognised value as a natural fertiliser. Stakeholders proposed changes to certification requirements, such as simplifying the process and aligning it with EU fertiliser regulations. The discussion also explored biogas roadmaps and concluded that, eventually, multiple roadmaps developed by different organisations will become part of Estonian legislation, influencing waste regulation and biogas sector funding. Overall, the workshop emphasised the need for regulatory alignment to support the growth of the biomethane sector in Estonia, contributing to the broader circular economy and climate goals.

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3.3.3 6th Workshop: Biomethane injection into D category natural gas transmission grid, digestate working group and Estonian Biogas Roadmap 2035: GreenMeUp Stakeholder Hubs Workshop

The sixth Biomethane GreenMeUp HUB workshop was held online on 10 June 2025 with 30 participants. The workshop focused on five key topics: biomethane injection into the natural gas grid; new biogas technologies; digestate legal amendments; the Estonian Biogas Roadmap 2035; and developments in the hydrogen sector. While the Ministry of Climate shared updates on the support scheme for biomethane injection points, stakeholders discussed the ongoing debate over whether to adopt a renewable energy- or greenhouse gas-based target under the RED III directive. The workshop also showcased new CNG and LNG vehicle technologies, semi-dry high organic load biogas production and digestate valorisation. The removal of financial guarantees for agricultural biogas plants under the digestate certification legal amendments was particularly welcomed. The draft Estonian Biogas Roadmap 2035 was presented and its practical implications for the biogas sector were discussed. The workshop concluded with insights into the hydrogen sector, including the BalticSeaH2 project, which aims to produce hydrogen for export to Germany. Overall, the workshop provided valuable updates on key regulatory and technological developments, making a significant contribution to the GreenMeUp project and Estonia's biomethane agenda.

3.4 Stakeholder Hubs in Latvia

Key takeaways

- Urgent need for regulatory clarity and national targets: Latvia lacks clear legal obligations for grid operators and specific biomethane production targets, hindering investor confidence and long-term planning. Alignment with EU policies such as RED III and REPowerEU is critical for accelerating market development.
- Stronger intersectoral coordination is essential: Limited coordination between ministries (e.g., energy, climate, agriculture) and stakeholders delays policy progress and project implementation. Stakeholders called for dedicated working groups and better integration of biomethane into national strategies, including the NECP.
- Market uptake depends on enabling infrastructure and stakeholder engagement: Bureaucratic barriers, slow TSO approvals, and low awareness among potential offtakers (e.g., transport operators) impede market growth. Enhancing infrastructure readiness, demand-side incentives, and targeted communication campaigns is key to driving biomethane adoption.

3.4.1 4th Workshop: Stakeholder Dialogue and Policy Alignment

The fourth stakeholder workshop in Latvia took place at the BovoGas biomethane plant—Latvia's first grid-injected biomethane project—serving as a real-life case study to anchor the discussion. The event gathered stakeholders from government, industry, and the technical community to explore policy and market conditions for biomethane development. Key discussions centred on the lack of legal clarity around grid access, insufficient policy integration in Latvia's National Energy and Climate Plan (NECP), and challenges in stimulating market demand. Stakeholders emphasized the urgent need for regulatory clarity, cross-sector coordination, and national biomethane targets. The workshop concluded with a call for stronger alignment

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between national and EU strategies, including legal obligations for transmission system operators (TSOs) and targeted support mechanisms to drive demand and project bankability.

3.4.2 5th Workshop: Market Integration and Regulatory Challenges

The fifth Latvian stakeholder workshop focused on market integration indicators and shared the latest results from the GreenMeUp project, including performance metrics and findings from the FCM analysis. The event highlighted three main challenges: bureaucratic hurdles tied to TSOs, slow legislative progress hindering biomethane deployment, and the need for more specialized and frequent stakeholder workshops. Participants called for enhanced ministry involvement and more structured dialogues across the value chain, particularly for the transport sector. The workshop played a key role in advancing Latvia's biomethane agenda by identifying actionable bottlenecks and fostering alignment between producers, policymakers, and technical experts. These insights support a more robust framework for future biomethane development.

3.4.3 6th Workshop: Future Prospects and EU Alignment

The final GreenMeUp workshop in Latvia brought together national stakeholders to reflect on the project's outcomes and discuss the path forward for biomethane in light of EU targets. The session emphasized the urgent need to align national policy with the EU's RED III and REPowerEU objectives, particularly in setting binding biomethane production targets. Key barriers discussed included regulatory gaps, unclear obligations for TSOs, limited infrastructure readiness, and weak inter-ministerial coordination. Participants stressed the importance of involving municipalities and farmers in future planning to support decentralized production. The event concluded by reinforcing biomethane's role in Latvia's energy transition and laid the foundation for a coordinated, strategic approach to policy, infrastructure, and stakeholder engagement. The workshop marked a strong close to Latvia's GreenMeUp journey by translating project insights into policy-relevant actions.

3.5 Stakeholder Hubs in Greece

Key takeaways

- **Clear and inclusive policy design is critical**: Stakeholders stressed the need for a stable and comprehensive legal framework that spans the entire biomethane value chain. This includes defining inter-ministerial responsibilities, securing feedstock access, ensuring fair and efficient grid connection, and addressing certification and taxation issues.
- **Support mechanisms should match market readiness**: While participants preferred feed-in tariffs or premiums to competitive bidding, they acknowledged the need to align with EU regulations. There was strong interest in auction schemes linked to national targets, environmental premiums, and international trade options to ensure investment certainty and market liquidity.
- **Broad engagement and strategic planning drive market uptake**: The workshops successfully brought together policymakers, regulators, market actors, and technology providers. This multi-stakeholder dialogue underscored the importance of coordinated policy development, technological innovation, and long-term vision to scale up biomethane in Greece's energy transition.

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3.5.1 4th Workshop: GreenMeUp 4th workshop

In the fourth GreenMeUp workshop, held online with over 40 participants, stakeholders from across market, policy, and societal sectors discussed proposed policy measures for biomethane market development in Greece. Discussions revolved around the draft legislation on biomethane, financial support schemes, certification, and grid access criteria. Key outcomes included the need for a comprehensive and inclusive legal framework, support mechanisms aligned with EU rules, and regulatory clarity on grid access, digestate reuse, and certification protocols. The interactive session enabled valuable exchange between industry and policymakers, contributing directly to the shaping of Greece’s national policy framework for biomethane.

3.5.2 5th and 6th Workshop: GreenMeUp 5th workshop

This final, large-scale workshop in Athens brought together 80 participants, including policymakers, energy authorities, technology providers, and industry representatives. It served to present and validate the GreenMeUp results while also examining best practices from other EU countries and current developments in Greek legislation. Key topics included the draft law on biomethane, grid integration, technology options, and stakeholder perspectives. Discussions emphasized the need for stronger policy alignment, better access to feedstock, and financial incentives. Final recommendations focused on enabling infrastructure, reducing bureaucratic barriers, and ensuring public and stakeholder awareness to accelerate biomethane market uptake in Greece.

3.6 Stakeholder Hubs in Poland

Key takeaways

- Poland is progressing toward a national biomethane strategy, but implementation will require sustained policy commitment: The workshops led to the development and approval of the Biomethane Sector Development Programme, a key milestone for structuring future market growth. The strategy now needs political backing and integration into legislative processes.
- Regulatory and infrastructure challenges persist, especially around grid access: Participants identified administrative delays and unclear procedures for connecting biomethane plants to the gas grid as major bottlenecks. Streamlined regulations, binding obligations for TSOs, and better coordination are necessary to unlock infrastructure investment.
- Investment readiness depends on supportive policies and bankability frameworks: Ensuring financial viability for biomethane projects requires clearer incentive mechanisms, stable regulatory conditions, and guidance on risk reduction. Workshops highlighted the importance of showcasing successful, bankable models to attract investors and scale deployment.

3.6.1 4th Workshop: 4th stakeholder workshop

The focus of this workshop was to discuss the biomethane market in the EU, Poland and the countries targeted by GreenMeUp. The aim was to present the results of a SWOT analysis, validate key strategic actions and introduce the Fuzzy Cognitive Mapping (FCM) methodology. Participants discussed the biomethane certification process, sharing insights from the Czech Republic and Estonia, and considering how Poland could adopt similar standards. The workshop concluded with a collective decision to develop a biomethane market

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strategy for Poland, based on the GreenMeUp project and stakeholder input. This strategy will be crucial in shaping future biomethane policies and market growth in Poland.

3.6.2 5th Workshop: 5th stakeholder workshop

The fifth Stakeholders Workshop focused on presenting the draft 'Biomethane Market Development Programme' for Poland, which was prepared by the GreenMeUp project team. During the session, participants reviewed the document and offered initial feedback on the strategies proposed for the biomethane sector. This workshop was a crucial step in the development of a comprehensive biomethane market plan for Poland. Attendees were encouraged to submit their comments by 7 January 2025 to further refine the document. The final version of the plan will be presented to key stakeholders, including the Ministries of Climate and Agriculture, Parliament, and the Senate, with the aim of promoting the implementation of biomethane in Poland.

3.6.3 6th Workshop: Future of the biomethane market in Poland

The final workshop of the GreenMeUp project presented the project's results and the outcomes of national stakeholder activities in Poland. A key achievement was completing the 'Biomethane Sector Development Programme in Poland', which was widely promoted within the sector and to key decision-makers. The workshop also emphasised the importance of policies and support schemes for developing the biomethane market, drawing on insights from a policy workshop held in Leipzig.

Key discussions included the challenges of connecting biomethane plants to the grid, where, despite progress being made, administrative delays remain an obstacle. The final version of the 'Biomethane Sector Development Programme' was presented, accepted and approved for public distribution. The workshop also featured a presentation on how to make biogas and biomethane projects bankable, providing valuable insights for investors. In conclusion, the workshop emphasised the need for regulatory adjustments, cost efficiency, sustainable resource management and infrastructure development to support the growth of Poland’s biomethane market. After this workshop the Vice Minister of Climate invited PIGEOR representatives to present the programme and discuss its contents in more details.

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3.7 Stakeholder Hubs in Spain

Key takeaways

- Social acceptance is a critical success factor for biomethane projects: Stakeholders repeatedly highlighted the need for early, transparent, and empathetic engagement with communities. Strategies include participatory planning, local benefit-sharing, and clear communication to overcome opposition and build trust.
- A structured policy and incentive framework is needed to unlock market potential: Participants stressed the importance of setting national biomethane targets, creating stable revenue mechanisms (e.g., quotas, fiscal incentives), and aligning development with RePowerEU goals to attract investment and reduce market uncertainty.
- Cross-sector collaboration and local integration are essential: Effective coordination among stakeholders—producers, government, investors, and civil society—is needed to integrate biomethane into broader environmental, agricultural, and demographic strategies. Biomethane is seen not only as an energy solution but also as a driver for rural development and circular economy goals.

3.7.1 4th Workshop: SWOT Analysis and Strategy Definition

The fourth Spanish stakeholder workshop focused on presenting and refining the results of a SWOT analysis, leading to the identification of five key strategies for advancing biomethane development in Spain. Through structured one-to-one feedback and discussion, participants collaboratively defined strategic priorities. These included: establishing a realistic roadmap aligned with RePowerEU objectives; creating a quota-based incentive system for gas traders; enhancing cross-sector coordination to address environmental and demographic challenges; promoting stakeholder collaboration to reduce opposition to projects; and implementing economic and fiscal incentives such as feed-in tariffs and tax benefits. The workshop resulted in a clear, shared understanding of strategic needs, with stakeholders actively engaged in shaping Spain's biomethane pathway.

3.7.2 5th Workshop: Market Integration Indicators

This workshop presented final results from the GreenMeUp project's Fuzzy Cognitive Mapping (FCM) process and key performance indicators (KPIs), aiming to deepen the integration of biomethane into Spain's policy and market frameworks. A primary focus was on improving social acceptance through seven areas of best practice: community dialogue, environmental commitment, community benefits, suitable plant siting, efficient waste and digestate management, and strict safety measures. These were discussed in depth, highlighting the importance of transparency, early stakeholder involvement, and environmental safeguards. The workshop emphasized that stakeholder engagement and trust-building are essential for the successful implementation of biomethane projects and laid groundwork for aligning project outcomes with national policy development.

3.7.3 6th Workshop: Social Opportunities

The final Spanish stakeholder workshop aimed to consolidate the GreenMeUp project's findings and enhance the social dimension of biomethane deployment. Discussions emphasized best practices for improving public acceptance, including early and empathetic community engagement, environmental responsibility, benefit-

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sharing, and participatory planning. A central theme was the need for a "social license to operate," underscoring the importance of dialogue with local communities and interest groups. The workshop also introduced SOOP – the Social Opportunities Assessment Toolkit, a proposed digital platform to help clean energy developers assess and manage social acceptance and risks. Participants recognized social acceptance as a major bottleneck and actively contributed to identifying strategies to overcome it, marking a key step toward more inclusive and community-aligned biomethane projects in Spain.

4 Conclusions

The Hub workshops consistently highlighted the need for clearer and more ambitious national biomethane targets aligned with overarching EU climate and energy goals. Regulatory uncertainty, including complex and slow administrative procedures, remains a key barrier hindering biomethane market development and investor confidence. Effective grid access and the role of Transmission System Operators emerged as pivotal challenges, with calls for stronger legal obligations, transparent processes, and timely cooperation mechanisms. Cross-sector coordination between ministries, regulators, and stakeholders is essential to overcome fragmented policy landscapes and to integrate biomethane into national energy, transport, and agricultural strategies. The promotion of demand-side incentives, such as green gas quotas and carbon credit schemes, was identified as equally important as securing supply to ensure market uptake and project bankability. Harmonizing certification schemes, especially regarding digestate management and guarantees of origin, is vital to support sustainable biomethane production and facilitate trade within and across EU member states. Innovation and diversification of sustainable feedstocks, alongside emerging technologies in grid injection and alternative fuels, underpin the sector's potential to contribute to decarbonization in transport and energy systems.

Regional cooperation and knowledge exchange were proven effective in addressing shared challenges, promoting best practices, and aligning strategies in multi-country contexts such as the Danube region. Strategic roadmaps and long-term policy frameworks tailored to national circumstances but consistent with EU directives are needed to provide clarity and stability for market actors. Overall, the GreenMeUp project has significantly advanced stakeholder engagement, policy dialogue, and scientific understanding, thereby laying a robust foundation for accelerating biomethane deployment across Europe in support of a climate-neutral future.

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Annex: Detailed workshop reports for all target countries

Czech Republic

4th Workshop

Date and Time, Location	28.05.24, Hotel Allvet (Drnovice, Czech Republic)
Participants	20+ (not all participants were part of HUBs)

Method
Presentation and open discussion with slido

Workshop objectives
The aim of the event was to provide a comprehensive view of the current state and development of the biomethane market, to present key studies from abroad and to identify the key obstacles hindering the further development of this sector. The event also aimed at an open discussion with stakeholders to contribute to the formulation of possible measures to promote biomethane. The expected outcome of this meeting was to provide valuable input for strategic planning and the formulation of recommendations for further development of the biomethane market. The discussion provided concrete feedback from stakeholders to better target the necessary changes in legislation, financing and infrastructure. At the same time, the aim was to strengthen cooperation between key market players and create conditions for more effective implementation of best practices from abroad.

Key takeaways
1. Topic: GreenMeUp project development, SWOT analysis strategies and FCM results **Discussion:** The discussion focused on the presentation of the GreenMeUp project, its outputs to date and key studies from abroad. The results of the SWOT analysis were presented, which identified the strengths and weaknesses of the biomethane market and defined strategies for its development. At the same time, the results of the FCM analysis were presented, which, based on interviews with ten partners, helped to better understand the interrelationships between the factors affecting the sector. **Key takeaways:** The participants were informed of the results without major comments **2. Topic: Identification of barriers to biomethane development - economic barriers and need for support** **Discussion:** The main topic of discussion was the economic aspect of biomethane development, especially the setting of operational and investment support. In the Czech Republic, there is relatively good investment support for biomethane produced from waste, but the key operational support is insufficient and poorly set up. This has led to a lack of significant market breakthroughs despite favourable conditions for the development of the sector. **Key takeaways:** Participants agreed on the need to adjust the parameters of the current support, if possible, while starting to prepare for a new support model that would ensure the long-term stability of the market.

Conclusion
The workshop was quite successful due to the great interest in the sector and the successful conference format we used. The debate was interesting and we agreed on a unified approach and reinforced what

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weighs most heavily on the sector. Based on the outcome of the Workshop, we planned the future activities of the association.

5th Workshop

Date and Time, Location	15.10.24
Participants	42

Method
Guided discussion on exact topic, every attendant had a opportunity to express his/her opinion

Workshop objectives
The main goal of the event was to summarise the annual biomethane achievements (new biomethane plants, expected production, potential of biomethane based on the latest data, new technologies, supporting system of Czech government). As well as identifying the obstacles that slow down the development of biomethane in the Czech Republic. The Expected results were the identification of weak points in biomethane development. Which area needs to be thoroughly focused on, which institution to approach for sufficient results. And to point out the lobbying areas.

Key takeaways

1. Topic: legislative obstacles
Discussion:
- Lack of a strategic development plan
- New National Energy Concept and the updating of the National Energy and Climate Plan that is not yet finalised

Key takeaways:
- Lack of a strategic development plan: It is not clear where the sector is targeting, what its potential is, how this potential will be integrated into the different industries. So far there is only a prevailing consensus that we need biomethane, but this is not enough to create an incentive investment environment.
- New National Energy Concept and the updating of the National Energy and Climate Plan that is not yet finalised: there is still space for lobbying

2. Topic: biomethane awareness
Discussion:
- Insufficient declaration of the need for biomethane from the highest government authorities.
- Lack of information at the highest levels of government.

Key takeaways:
- Insufficient declaration of the need for biomethane from the highest government authorities: there is a need for more biomethane propagation and education campaigns
- Lack of information at the highest levels of government: there is a need for more biomethane propagation and education campaigns

3. Topic: existing legislative weak points
Discussion:
- Biomethane is often neglected in strategic planning. Poor coordination of ministries in joint action.

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- Binding European rules and regulations. On the one hand, Europe has been a major driver of progress in renewable energy, but at the same time tightening rules are making development more difficult. Lengthy procedures and approval processes at European authorities. **Key takeaways:** - Biomethane is often neglected in strategic planning. Poor coordination of ministries in joint action: There is a lack of representatives of the bioenergy sector in key positions of the highest authorities, which, due to the complexity of the sector, leads to incomplete conclusions or outright wrong decisions. The direction of bioenergy thus appears confused. - Binding European rules and regulations: On the one hand, Europe has been a major driver of progress in renewable energy, but at the same time tightening rules are making development more difficult. Lengthy procedures and approval processes at European authorities.

Conclusion
This GreenMeUp meeting was full of important and interesting information. With 42 people in attendance, it was one of our most successful meetings yet. At the same time, we managed to convince several journalists to attend and write about the event, thereby raising awareness of biomethane. The event also included a CZ Biom press conference on biomethane.

6th Workshop

Date and Time, Location	20.05.25, Hotel Tři Věžičky
Participants	180

Method
The method chosen was a lecture format with a discussion at the end

Workshop objectives
The aim of the workshop was to discuss the current legislative developments in the field of biomethane in the Czech Republic, especially the upcoming changes in the system of operational support in the form of auctions, issues related to guarantees of origin for off-grid solutions and the future of biomethane production versus electricity from biogas. The meeting aimed to gather the views of experts and government representatives on the upcoming changes and to generate discussion on the necessary adjustments to the system to better incentivise investment in decarbonisation. The expected outcome was the identification of key barriers and shortcomings in the current set-up, as well as the collection of suggestions for adjustments to the system of operational support, the mechanism of guarantees of origin and legislative requirements towards biomethane producers.

Key takeaways
1. Topic: New operational support in the form of auction **Discussion:** A new form of operating support has been introduced, which will be based on an auction system for any installed capacity from 2026. The support will be provided for 15 years, with the first auction expected in Q2 2026 and the last in 2028. The need to ensure indexation of the support over time was discussed, as well as the fact that green certificates and guarantees of origin remain with the state, which reduces the incentive for producers to increase emissions savings. **Key takeaways:** - The auction model brings greater transparency, but without clear indexation it can lead to financial uncertainty for projects.

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- Producers lose the incentive to make emission savings if the guarantees of origin remain solely with the state.
- Compensation instruments or other incentive mechanism for higher environmental benefits of projects will need to be considered.

2. Topic: guarantees of origin for off-grid solutions
Discussion: The debate focused on the current efforts to introduce a system of guarantees of origin for biomethane that is not injected into the gas grid but is used, for example, in transport or at the point of consumption. A dialogue is ongoing with MIT, OTE and ERO on the practical application of this mechanism for the purpose of bio-diesel filling and recognition.
Key takeaways:
- Currently, there is no functional tool for monitoring and recognition of off-grid biomethane.
- Without the possibility to apply guarantees of origin, biomethane cannot be used effectively, for example in transport.
- The proposal requires close cooperation with institutions and can significantly promote the local use of biomethane.

3. Topic: uncertainty for existing and new projects
Discussion: The absence of a fixed indexation mechanism in the law for existing and new operating aid was pointed out. The amount of aid is therefore uncertain and non-transparent for investors. Participants highlighted the risk that this situation may discourage new projects or threaten the stability of existing facilities
Key takeaways:
- Without statutory indexation, it is impossible to plan long-term investments.
- Inflation and rising operating costs are devaluing the current support system.
- The introduction of a predictable indexation formula is key to maintaining the attractiveness of the sector.

4. Topic: Electricity or biomethane? Comparison of biogas efficiency
Discussion: The topic focused on comparing the benefits of electricity and heat production versus biomethane production. Differences in efficiency, on-site energy options and impacts on decarbonisation targets were presented. Participants debated how to choose the appropriate path according to available infrastructure, local demand and legislative instruments.
Key takeaways:
- Biomethane offers greater flexibility of use and potential for decarbonisation in transport.
- Electricity and heat generation is profitable for local consumption but less scalable.
- The choice of route should be based on local conditions and supporting schemes.

Conclusion

The workshop contributed significantly to the transfer of the results of the GreenMeUp project to the national debate on the future of biomethane in the Czech Republic. The discussion on specific legislative proposals - including new operational support in the form of auctions, the issue of guarantees of origin and indexation of support - provided a space for linking the analytical outputs of GMU with current legislative and regulatory processes.

The outputs of the GMU project, in particular the identified obstacles and strategic proposals for development, were actively reflected during debates with participants from the professional public and the state administration. The workshop strengthened awareness of the need for systemic changes to

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enable wider use of biomethane in transport and energy, and contributed to the search for concrete solutions to remove investment uncertainty and improve incentives. The meeting thus contributed to greater consideration of GreenMeUp priorities in the national agenda and fostered dialogue among key stakeholders, which is essential for the successful implementation of the proposed strategies.

Danube Region

4th Workshop: Danube Biomethane Hub - 4th meeting

Date and Time, Location	19.06.2024, Online (Organiser: INCE)
Participants	38

Method
Presentation and open discussion

Workshop objectives
The primary objective of the 4th Danube Biomethane hub meeting was to advance the uptake of biomethane and biogas technologies in the Danube region (specifically in Serbia, Hungary, and Romania), as part of the broader GreenMeUp project. The event aimed to: - Provide stakeholders with up-to-date and actionable knowledge, focusing on both challenges and opportunities for biomethane market uptake. - Present, discuss and validate the results of the SWOT analysis. - Present and discuss the Fuzzy Cognitive Mapping. - Facilitate cross-border cooperation, considering shared historical and geographic features of the involved regions despite administrative differences. - Enhance policy alignment and identify market-enabling conditions tailored to local contexts. - Share best practices (e.g., the Danish biomethane model) to inspire and inform regional strategies. Results that we expected to gain can be summarised as follows: - A deeper understanding of regional barriers and enablers for biomethane adoption. - Development of actionable recommendations for policy and market development. - Strengthened stakeholder networks for future collaboration beyond the project's duration. - Increased awareness of the role biomethane can play in the circular economy, renewable energy systems, and climate targets.

Key takeaways
1. Topic: Danish Biogas Model as a Reference for Regional Development
Discussion: One of the focal points of the workshop was a comprehensive presentation by Bruno Sander Nielsen, CEO of the Danish Biogas Association, who introduced the Danish biogas and biomethane model as a mature, structured, and policy-integrated example for other countries. The discussion highlighted the importance of consistent and predictable support schemes (e.g. feed-in tariffs and grid injection subsidies), a robust certification system (guarantees of origin), and infrastructure investment—especially in ensuring reverse gas flow capacity in the grid to handle local surpluses. Furthermore, he emphasized Denmark's dual-track strategy: using biogas both as a circular economy instrument (e.g. sustainable waste handling and fertilizer production) and a tool for energy system stabilization. **Key takeaways:** Participants recognized the Danish model as a benchmark for coordinated policy, market mechanisms, and technical infrastructure. There was general consensus that while the Danish approach

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cannot be copy-pasted, its core principles—particularly stakeholder integration, regulatory stability, and market-based mechanisms—could inspire context-specific adaptations in Danube Region countries. However, participants also acknowledged that structural differences, such as farm sizes, waste collection systems, and administrative barriers, would require tailored strategies.

2. Topic: Regulatory and Legal Framework for Waste-Based Biogas and Digestate Use
Discussion: Lucile Sever from the European Biogas Association (EBA) provided a detailed overview of the European regulatory landscape governing the use of waste feedstock and digestate in biogas production. She emphasized the critical role of the Waste Framework Directive and Urban Wastewater Treatment Directive, both of which set foundational rules for feedstock classification, permitting, and product status (e.g. waste vs. byproduct). A particularly complex aspect was the legal uncertainty surrounding digestate. Ms. Sever noted that in many Member States, digestate derived from waste feedstocks is still classified as waste, which hampers its use as fertilizer despite its agronomic value. She also outlined the barriers created by the lack of harmonized end-of-waste criteria across the EU, the limited implementation of the EU Fertilising Products Regulation, and national inconsistencies that undermine market confidence in digestate products.
Key takeaways: Stakeholders concluded that the absence of clear and harmonized legal definitions for digestate severely limits the potential for circular bioeconomy applications. There was agreement on the need for more robust national legislation that recognizes digestate as a fertiliser product when quality thresholds are met. In addition, participants supported efforts to improve public perception and acceptance of waste-derived bioproducts and called for better regulatory alignment at the EU and national levels to unlock the environmental and economic benefits of digestate use.

3. Topic: Validation of SWOT Analysis and Introduction of the Fuzzy Cognitive Mapping (FCM) Process
Discussion: Another important part of the 4th Hub agenda focused on the presentation and validation of a regional SWOT for the biomethane sector in the Danube region. The analysis was developed by local experts from Hungary, Serbia, and Romania as part of the GreenMeUp project's ongoing effort to ground its recommendations in local realities. The workshop provided a platform to discuss and refine the findings of the SWOT exercise, with contributions from stakeholders representing government, academia, industry, and civil society. Key themes included inadequate regulatory frameworks, limited financial incentives, underdeveloped infrastructure, and fragmented stakeholder coordination as primary weaknesses. However, opportunities such as cross-border cooperation, alignment with EU decarbonization goals, and potential for agricultural waste valorisation were also emphasized. In the second part of the session, the facilitators introduced the Fuzzy Cognitive Mapping (FCM) method, a participatory modelling tool that will be used to structure stakeholder knowledge and explore the interdependencies between various factors influencing biomethane market development. Participants were informed that the FCM process would build upon the validated SWOT elements and aim to simulate how changes in one domain (e.g., subsidies, policy clarity, infrastructure investment) could impact the overall system.
Key takeaways: The validation session confirmed that the SWOT analysis accurately reflects the shared challenges and prospects across the tri-national region. It was agreed that this analytical foundation provides a credible basis for entering the next phase of the project: participatory modelling through FCM. Stakeholders expressed interest in the FCM tool as a means to make complex relationships visible and actionable, especially in the context of fragmented governance and multiple interacting policy areas.

Conclusion
The 4th Danube Hub meeting significantly advanced the impact of the GreenMeUp project by directly linking its research-driven outputs with the real-world policy and market conditions in Serbia, Hungary, and Romania. By convening a diverse group of national stakeholders—including representatives from ministries, academia, energy companies, and bioeconomy associations— the event served as a critical bridge between EU-level objectives and national-level action.

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The workshop created a space for open dialogue, enabling participants to evaluate the relevance and applicability of project findings—such as SWOT analysis insights and policy gaps—in their specific national contexts. It also fostered mutual learning through best-practice exchange, most notably with the presentation of Denmark's biomethane success story. This comparative perspective helped participants identify concrete areas where national agendas could be adapted or strengthened, particularly in terms of regulatory clarity, infrastructure development, and incentive frameworks. Furthermore, the event laid the groundwork for policy-oriented modelling through the upcoming Fuzzy Cognitive Mapping phase, reinforcing the participatory nature of the project. By involving national actors in both the diagnosis of barriers and the co-creation of solutions, the workshop increased the ownership and credibility of GMU results, making it more likely they will be considered in future policymaking. In essence, the workshop did not merely disseminate information—it actively shaped the conversation around national biomethane strategies, elevating the visibility of GreenMeUp and embedding its findings into local policy discourse. This strategic alignment is a key step toward ensuring the project's long-term impact on accelerating biomethane market uptake in the region.

5th Workshop: Danube Biomethane Hub – 5th meeting

Date and Time, Location	16.12.2024, Online (Organiser: INCE)
Participants	24

Method
Open discussion

Workshop objectives
The 5th Danube Biomethane Hub meeting brought together key stakeholders from the biomethane and biogas sectors across the Danube region with the primary objective of fostering stronger coordination and collaboration. Participants emphasized the need to build synergies between national actors, policy institutions, and industry stakeholders in order to create favorable conditions for the development and deployment of biomethane technologies. A central goal of the event was to assess national potentials for biomethane production through the presentation and discussion of recent studies and questionnaires, including those supported by international institutions. These enquiries evaluated the potential for biomethane production by 2030 and 2050, while identifying key feedstock sources, regulatory gaps, and economic feasibility. Participants also were reminded of the SWOT analyses and fuzzy cognitive mapping performed in the past, which helped define strategic directions tailored to national contexts. The meeting served as a platform to align stakeholders around common strategies for advancing the biomethane sector. Discussions focused on the importance of improving regulatory frameworks, raising awareness among decision-makers, and stimulating real market uptake. In this regard, recent policy developments—such as the issuance of guarantees of origin and anticipated implementation of the EU Gas Package—were viewed as significant opportunities to support market growth. Another expected outcome of the meeting was the facilitation of knowledge exchange and best practice sharing among countries in the Danube region. Stakeholders expressed interest in learning from the experiences of neighbouring countries to inform their own policy decisions and accelerate progress. The presence of representatives from European associations, such as the EBA, underscored the importance of connecting regional efforts with broader EU-level initiatives. In summary, the expected results include better informed national strategies, improved regulatory support, increased stakeholder engagement, and stronger integration of regional voices into the European biomethane agenda.

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During the 5th Danube Hub workshop, several key results from the GreenMeUp project were disseminated to participating stakeholders:

- outcomes of country-level analyses and strategic tools developed within the project framework, particularly those related to SWOT analyses and FCM.
- European-level insights shared by the European Biogas Association, which included production forecasts, regulatory updates (e.g. the Gas Package), and the potential scale-up of biomethane production across Europe.

The main goal of disseminating these GreenMeUp results was to inform national stakeholders about the strategic opportunities and challenges for biomethane in their respective countries, while also aligning regional actions with broader EU targets. By presenting clear data, policy analysis, and forward-looking strategies, the workshop aimed to empower stakeholders with actionable knowledge, foster cross-border collaboration, and support the development of consistent and favorable policy environments across the Danube region.

Key takeaways

1. Topic: Regulatory Frameworks and Support Measures for Biomethane Development

Discussion: Participants highlighted the lack of adequate national support measures for biomethane, especially in Serbia, where 35 biogas plants exist but no biomethane plants are operational. The need for updated and coherent legislation was discussed, particularly in the context of feed-in tariffs and the application of EU directives. The introduction of guarantees of origin (GOs) and the upcoming EU Gas Package were emphasized as key regulatory developments.

Key takeaways: There is a pressing need to harmonize national policies with EU frameworks to enable biomethane market uptake. The issuance of GOs and the right to grid injection under the Gas Package offer promising mechanisms, but successful implementation depends on national-level legislation and political will. Participants called for stronger coordination between ministries, industry stakeholders, and research bodies to create a supportive policy environment

2. Topic: Biomethane Potential and Strategic Planning in the Danube Region

Discussion: Presentations from Serbia, Romania, and Hungary shared results of SWOT analyses, biomethane potential studies, and strategies extending to 2050. Studies focused on identifying feedstock sources, assessing economic feasibility, and setting national targets for biomethane contribution in transport and energy. The role of academic and research institutions in producing evidence-based policy recommendations was emphasized.

Key takeaways: The Danube region holds significant untapped potential for biomethane production, but this must be supported by strategic, long-term planning. Country-specific strategies grounded in robust analysis (e.g. SWOT, FCM) are essential tools for setting realistic and impactful targets. Collaboration among stakeholders and cross-border learning are critical for refining and implementing national strategies.

3. Topic: Regional Cooperation and the Role of Stakeholder Hub

Discussion: The participants discussed the added value of maintaining regular multi-stakeholder hub meetings beyond the project duration. Examples of national and regional cooperation were shared, including the work of biogas associations and the potential role of CEI as a long-term interlocutor. The importance of involving European-level actors (e.g. EBA) to bridge national efforts with EU-level policy and advocacy was noted.

Key takeaways: Stakeholder hubs are effective platforms for dialogue, strategy alignment, and knowledge exchange across the region. Sustaining these hubs post-project can reinforce regional momentum and foster collective influence on EU policy developments.

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Conclusion
The workshop concluded on a positive and collaborative note, with participants expressing appreciation for the opportunity to engage in meaningful dialogue and share national experiences. There was a strong consensus that the format of these stakeholder hubs is valuable and should be maintained beyond the GMU project's duration. Several speakers emphasized the importance of continuing regional cooperation, not only to strengthen internal strategies but also to amplify the collective voice of the Danube region within broader frameworks. Stakeholders also welcomed the presence and input of the European Biogas Association (EBA), which helped to connect national-level discussions to European policy trends and production forecasts. The willingness of ministries and other institutional actors to engage with technical experts and associations was noted as a positive shift.

6th Workshop: Danube Biomethane Hub – 6th meeting

Date and Time, Location	22.05.2025, Online (Organiser: INCE)
Participants	21

Method
Open discussion and a Miro board session

Workshop objectives
Main goal of the 6th Danube Biomethane Hub meeting was to update project-related information (so to feed final deliverables), explore future cooperation opportunities, and strengthen collaboration among stakeholders to support the market uptake and local integration of biomethane initiatives. Expected results: - Refined input for the update of final project deliverables - Identification of national and regional policy and market updates - Reinforced cooperation across the biomethane value chain - Shared insights on challenges and strategies for biomethane deployment - Promotion of local biomethane production and sustainable solutions. During the 6th Hub Meeting, attendees were reminded of the project's key components and obtained results. The session began with a comprehensive recap of the GreenMeUp project, highlighting its overarching objectives, main activities, and achieved outcomes to date. Particular emphasis was placed on the development and operation of GMU hubs, as well as the critical support provided by the three national experts throughout the project lifecycle. Participants were also informed of recent policy updates and national developments relevant to the biomethane sector. These included Hungary's Biogas Action Plan, initiatives to support biomethane production facilities, regulatory developments such as extended feed-in tariff contracts in Serbia, and challenges related to emissions measurement and certification mechanisms. The interactive Miro Board session further allowed stakeholders across the biomethane value chain to contribute insights on societal needs, community engagement, and policy support, reinforcing the importance of aligning projects with local values and sustainability targets.

Key takeaways
1. Topic: Key policy requirements for improved market uptake of biomethane
Discussion: National-level initiatives were shared, such as Hungary's Biogas Action Plan and upcoming Call for proposal to support the construction of new biogas facilities (particularly those focused on biomethane production) with approx. budget of 100 million euros, and Serbia's extension of feed-in tariff contracts from 12 to 20 years (initiated by the national power company, EPS). The regulatory environment remains

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inconsistent across countries, with some lacking official biomethane strategies (e.g., Serbia). Experts highlighted the complexity of emission measurement from biogas due to varied feedstocks, which hinders regulatory clarity and carbon certification.
Key takeaways: Stable and supportive policies are essential for scaling biomethane. Clear regulatory mechanisms, including guarantees of origin and carbon market integration, could incentivize investment. Simplification of policy and improved data availability are necessary to support national-level strategies.

2. Topic: Deployment Potential in the Transport Sector
Discussion: Several participants emphasized biomethane's potential in the transport sector due to its compatibility with existing infrastructure. Economic challenges were discussed, including the current high cost of biomethane (and green methanol) compared to natural gas. Serbian cases were cited where biomethane could become viable if renewable fuel mandates are introduced and supported by excise tax reforms.
Key takeaways: The transport sector presents a promising early-use case for biomethane, but needs targeted incentives and investment. Public transport systems could serve as pilot models due to their structured logistics and emissions goals. Cross-sector cooperation, especially between transport operators and biomethane producers, will be key to effective deployment.

3. Topic: Local Production and Community Integration
Discussion: The concept of "going local" was repeatedly emphasized as a strategic approach to increase sustainability and reduce reliance on centralized energy systems. Logistical challenges were identified in sourcing appropriate substrates (e.g., manure) and aligning with regional capacities. Social equity and alignment with community needs were discussed as vital for biomethane/biogas acceptance and long-term viability.
Key takeaways: Localized biomethane production supports environmental, social, and economic sustainability. Projects must be tailored to local conditions and should involve community stakeholders early in the process. Community engagement and transparent communication can improve public trust and drive adoption.

Conclusion
The importance of having all relevant actors across the biogas value chain participate at these hub meetings, and contributing willingly throughout the project lifetime, was highlighted and appreciated. Stakeholders discussed potential solutions to accelerate biomethane market uptake, taking into account all the information/outcomes provided so far through the GreenMeUp project. Policy sector remains a key pillar for enabling base ground rules for employing biomethane in these three countries of the Danube Region, and this workshop granted the opportunity to share updates ensuing on the national level. The interactive Miro Board session further allowed stakeholders to contribute insights on societal needs, community engagement, and policy support, reinforcing the importance of aligning projects with local values and sustainability targets. Participants emphasized the importance of aligning initiatives with community values, ensuring social equity, and fostering multi-sector partnerships. The importance of continuing collaboration and knowledge exchange beyond the project lifecycle was reiterated, and the value of national updates was emphasized, together with technical perspectives, and local integration as the sector moves forward.

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Estonia

4th Workshop: 4th Estonian Hub meeting

Date and Time, Location	13.06.2024, Estonian Biogas Association
Participants	16

Method
Discussion

Workshop objectives
The 4th Estonian Hub meeting took place on 13.06.2024 in physical form. Meeting was organized by Estonian Biogas Association and it consisted study visit to Estonias newest biogas plant in Ebavere and conference regarding to SWOT analysis and ongoing governmentally funded „Biogas sustainability study.“ Meeting gathered participants from Ministry of Climate, Ministry of Regional Affairs, universities working on the study, market players, plant operators and consumers. Length of the meeting was 5h and 16 people attended the meeting

Key takeaways

1. Topic

Discussion: First topic was the amount of sustainable feedstocks, which were, according to public opinion, underestimated. Stakeholders were able to point out additional sources regarding to their experience and technological improvements that would grant significant amount of production.

Key takeaways: Suggested improvements were: 4th cut of silage to be considered 2nd generation biomass, as it is not collected from the fields for agricultural feedstock, yet it will have value as biogas substrate. Food industry waste to be included as negative emission biogas feedstock. Biomass collected from wetlands to be considered as negative emission feedstock and to be presented in the study. Biomass collected from nature reserves to be considered in the study. Power-to-gas solutions to be included in the study. Biodegradable waste to be mapped in the study.

2. Topic

Discussion and key takeaways: Secondly calculation of guarantees of origin were evaluated. From the start of year 2024, biomethane guarantees of origin were equalized with HVO, which means biomethane is considered to be zero emission fuel. Our stakeholders collective request was to re-evaluate the strategy, since biomethane, depending on source and production technology, can also be counted as minus emission fuel which would give locally produced biomethane priority in the fuel market compared to imported HVO.

3. Topic

Discussion and key takeaways: Third topic was indeed consumption of biomethane and most preferable market for it. Since car manufacturers have ended or decreased production of CNG vehicles, and there is no profitable legislation that would benefit biomethane in industrial and heating applications, most demanding option for Estonian biomethane is foreseen to be in public transport, heavy road transport and regional maritime sector.

Input to the study was following: Public procurements should prefer locally produced green fuels to imported ones, Maritime sector to be included in the study, Heavy transport to be included in the study, Agricultural sector green energy consumption to be included in the study

Conclusion

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4th stakeholder hub meeting focused mainly on the hottest topic of the sector which is ongoing „Biogas sustainability study.“ This study will consist re-evaluated potential of Estonias biomethane production and will indicate most preferable ways of consumption in the future. As it is essential for producers and market players to give feedback for most truthful results, our meeting had remarkable impact. The Second panel of the meeting was analysis and improvements to EstBA SWOT-TOWS analysis and strategies. Ahto Oja gave an introduction of what has been put together so far and also introduced interviews of our FCM. After presentation discussion round followed and numerous improvements were suggested. Combination of Hub meeting, FCM and EstBA indicators and strategies can be found in our SWOT-TOWS file uploaded into Dropbox.

5th Workshop: Biogas Digestate and biogas Roadmap 2035 - Estonia GreenMeUp Stakeholder Hubs Workshop

Date and Time, Location	21.11.2024, Online (Organiser: MTU Estonian Biogas Association)
Participants	28

Method
Brainstorming, Presentation with Q&A

Workshop objectives
The Biomethane GreenMeUp HUB workshop was an information exchange platform for the development of the field of gaseous renewable fuels. The platform offers a place for argumentative exchange of ideas. The seventh Forum took place on 21.11 from 15:00 to 17:00 in the Google Meets environment. The focus was on 2 topics: digestate (approx. 1 hour) and biogas roadmaps (approx. 1 hour). Why does Estonian legislation treat biogas digestate as waste, when it is essentially and factually proven to be a natural (non-fossil) fertilizer, free of weed seeds, with minimal odor, and immediately available to plants? Manure does not require a waste permit, but digestate obtained from manure with spoiled vegetables (which environmental authorities consider as waste) does require a permit? A slurry pumping station at a farm does not require an environmental permit, but pumping the same slurry to a biogas plant requires an equivalent pumping station permit? A slurry store can be roofless, but must a storage facility for digestate from slurry have a roof? Another topic is biogas roadmaps - should they be more minimalistic or a list of all measures developing the biogas sector, from which political will determines the choice? Should measures for the use of digestate be included in the roadmap? How many biogas roadmaps does Estonia need?

Key takeaways
1. Topic: Biogas digestate **Discussion:** Domestic biogas production has gained momentum, i.e. the current production units have been expanded and four new biogas plants are expected to open in 2026. In connection with the development of the field, it is important that the regulatory side of biogas modernizes in parallel and does not unreasonably hinder the operation of existing and new plants. Biogas production is today the best working example of a complete circular economy in Estonia, where agricultural raw materials and controlled food industry residues come together and domestic green gas is produced. As a by-product of the production process, fermentation ice or digestate is produced, which is a valuable fertilizer for farmers.

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We are of the opinion that the current requirements for digestate certification are not justified and forums. In today's regulatory environment, obtaining/maintaining a certificate is very difficult if not impossible. The reason is that the specified parameters are unreasonably in the range, especially with an alternative equivalent activity, where liquid manure is taken directly from the farm to the fields. Therefore, if the corresponding certificate is not available, there is a constant risk that the certificate may even be revoked due to some formal so-called “deficiency”. On the other hand, the farmer receiving the digestate, despite the certificate being recognized, must have a waste permit to transport the digestate to the field, which is otherwise unreasonable and not realistic in actual practice. very, digestate is a safe and highly desired fertilizer for fields. Secondly, to further complicate and labour-intensive the entire process of applying for permits, among other things, the corresponding permit would need to be changed every time the farmer has to do what needs to be done to transport the digestate. Thirdly, as far as is known, no waste permit has been issued to farmers to transport uncertified digestate to the field, which illustrates the impracticality of this option.

For livestock farmers and farmers, an alternative to using manure for biogas production and then transferring the digestate to the field is to transfer the manure directly to the field, which does not require a waste permit. The regulation, where a waste permit is required for one use of manure (biogas production and use of uncertified digestate) and no permit is required for another use (direct transfer of liquid manure to the field), significantly reduces the interest of livestock farmers and farmers in producing biogas from manure. This in turn jeopardizes the availability of raw materials required for biogas production. At the same time, farmers are known to prefer digestate to manure due to its properties. Perhaps the current regulation and its continued implementation unreasonably restrict the activities of both biogas producers and farmers. Domestic green gas is necessary to meet the circular economy and climate goals set for Estonia by the European Union, and domestic production increases Estonia's energy security. In conclusion, we are of the opinion that the current requirements for the certification and acceptance of digestate are not justified or reasonable, and they significantly hinder and limit the economic activities of various individuals as well as the circular economy and climate goals set for Estonia more broadly, and reduce Estonia's energy security.

Key takeaways: Salmonella spp topic:

Proposal:

1. Measure only the 5 Salmonella serotypes dangerous to humans (source? reference?), not spp
2. If 1 of the 5 Salmonella serotypes dangerous to humans is found, then do not take away the certificate, but give it 3-6 months to clean up, and then measure again. Coli is not dealt with
3. Foreigners – not dealt with Metals
4. Let's start with the fact that Estonian standards would be the same as Latvian standards
5. Harmonize with EU fertilizer regulations
6. Look at the 3-month average like milk samples
7. Producers themselves regularly take samples of raw materials and fermentation residue to identify sources and see dynamics

Additional raw materials

1. Make a proposal to add these raw materials to Annexes 1 and 3 of the regulation, with the codes that biogas producers use and then there is no need to sanitize the fermentation residue mentioned in Annex 3
2. If there are raw materials from several barns/companies, from different entrepreneurs, then there would be no automatic obligation to certify, but it would be enough for the fermentation residue to meet the requirements

If a problem is found, the certificate would be immediately withdrawn, the proposal is:

1. The producer measures regularly, for example, once a month, and shows the dynamics,

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2. If it exceeds 1 time, then give up to 6 months to to put things in order
3. Look at the 3-month average as from milk samples

In Appendix 1, the "specification column" should not be binding, remove the entire purpose of the column and, if possible, remove it or, if there is an adequate justification, add a clarification as to what should definitely not be included.

1. Justification that the waste list is not a specification
2. The waste holder determines the code himself (specify, is this really the case?)
3. Remove the "specification" column from Regulation No. 12
4. Example: There is no glycerine in production residues in dairy production
5. But the production residue in dairy production is old curd, washing water from the yogurt line, which is not listed in the specification, but which is suitable for biogas production
6. Start collecting raw materials from producers with a waste code to add to Appendix 3 of Regulation No. 12, the fermentation residue of which does not need to be certified.

Proposal to form a joint working group on the topics of secondary raw materials and fermentation residue. The proposal is to put the Environmental Board's processes/precepts on hold until a solution is found and for the time being, misdemeanours will not be processed, and also to freeze the fact that digestate is handled as waste and may not be applied to fields as fertilizer. The proposal is to abolish the requirement for a financial guarantee for biogas raw materials, because the biogas producer does not inherently keep the raw materials just like that, but uses them for biogas production at the first opportunity. The introduction of a general principle in view of the circular economy goals and the obligation to recycle waste could be that all biodegradable materials that have no other use (except for incineration) are in principle suitable for biogas production. The regulation must support this in every respect

2. Topic: Roadmaps

Discussion: Estonia has few Biogas Roadmaps created and new ones are under drafting process. This can be seen not as negative tendency rather it indicates, that the Estonian biogas sector develops.

Key takeaways: The main conclusion was, that different NGO and project developed Roadmaps finally will be natural part of Estonian legislation with practical implications in the improvement of the (waste) regulation and budgetary allocations to the biogas sector.

Conclusion
The 5th HUB workshop was fruitful and contributed significantly to the GMU project results and to the biomethane national agenda.

6th Workshop: Biomethane injection into D category natural gas transmission grid, digestate working group and Estonian Biogas Roadmap 2035: GreenMeUp Stakeholder Hubs Workshop

Date and Time, Location	10.06.2025, Online (Organiser: MTU Estonian Biogas Association)
Participants	30

Method
Presentation, followed with Q&A and discussion.

Workshop objectives
The Biomethane GreenMeUp HUB workshop is an information exchange platform for the development of the field of gaseous renewable fuels. The eight Forum took place on 10.06.2025 from 15:00 to 17:00 in the

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Google Meets environment. The focus was on 5 topics and was covered with 8 presentations: (1) Biomethane injection into the Natural gas D category transmission grid (30 minutes); (2) new technologies (30 minutes); (3) digestate legal amendments (30 minutes); (4) Estonian Biogas Roadmap 2035 (30 minutes); (5) Baltic Sea Hydrogen project introduction. The main goal was to achieve the newest update on RED III transport sector targets, the technical and legal aspects as well as planned support mechanism for the biomethane injection into natural gas transmission grid. The goal was to get up-dated info on digestate related legal amendments proposed by the EBA/Ministry of Climate Joint Working Group. The goal was also to learn about new technologies, related to the CNG/LNG vehicles and semi-dry high organic load production technology. Finally, the latest update on the draft Estonian Biogas Roadmap 2035 was presented by the Ministry of Climate, which is partly based on the input of the GreenMeUp project. GreenMeUp project was introduced in general and the idea to continue with HUB meetings after the project life was suggested and participants agreed with it, because this kind of information up-date meetings are very useful also to promote the information exchange between market, policy and social HUB members. The GreenMeUp project provided input into the Estonian Biogas Roadmap 2035 drafting process, also the substantial content was given to the digestate joint working group. The knowledge and examples on biomethane injection into natural gas grid was provided by the GreenMeUp project to the Ministry of Climate and TSO Elering AS.

Key takeaways
1. Topic: Biomethane injection and RED III target **Discussion:** The Ministry of Climate is currently developing a support scheme for biomethane injection points, which will be introduced to market participants at the beginning of July. With a budget of 3 million euros, the aim is to support the establishment of at least three public injection points. The ministry has not yet decided how to implement the flexibility mechanisms for achieving the transport sector's renewable energy target under the RED3 directive—whether to choose a renewable energy-based approach (26% share of renewable energy by 2030) or a greenhouse gas (GHG)-based approach (13% GHG reduction by 2030). Among nearby countries, Finland, Lithuania, and Poland have chosen the renewable energy-based approach, while Sweden, Denmark, and Germany have opted for the GHG-based target. Latvia has also not yet made a decision. In Estonia, stakeholders are similarly divided: members of the Association of Transport Fuels support the renewable energy-based approach, while members of the Gas Association favour the GHG-based approach. **Key takeaways:** The main conclusion was, that producers have to be ready to apply for the investment support to build the biomethane injection facilities. However, concerning the dilemma of the RED III adoption whether via RE or GHG target the producers are falling apart and the Ministry of Climate has not decided yet. The new information on the biomethane injection conditions to the natural gas transmission grid was very useful for the participants, especially with the amendment, that injection can be done in every point of the transmission grid, which reduces the injections costs significantly. **2. Topic: New technologies** **Discussion:** The new CNG and LNG models were introduced and also the information, that Scania selling of CNG cars has increased 25% and the range with one filling has reached to 800 km was new and useful information to the participants. Secondly, the innovation semi-dry high organic load biogas production technology was introduced, with following features. - Dry matter content in the digester: 16%, concrete roof - Designed for solid feedstocks; liquid feedstocks can be added but are not required

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- Mixing with vertical mixers from top to bottom throughout (4–7 units)
- High reliability
- Highest gas yields with low tank volume
- High-quality and durable components
- Exceptionally stable fermentation process
- Industrial-grade plant construction
- Post-digester with CSTR technology
- Cooling required in summer

Thirdly the innovation technology and study visit results to Sweden on fertilization production from digestate of the biogas plant was presented.
Key takeaways: The main conclusion was, that new technologies of biogas production, digestate valorisation and new CNG truck models will create some optimism for the future sector development.

3. Topic: Biogas digestate
Discussion: The digestate related issues were introduced and discussed, including the practical amendments to the legal acts. Biogas production is today the best working example of a complete circular economy in Estonia, where agricultural raw materials and controlled food industry residues come together and domestic green gas is produced. Participants welcomed the adopted law amendment, that biogas digestate at agricultural biogas plant should not have the financial guarantee anymore. The joint Working Group of EBA and Ministry of Climate presented the amendment to the current requirements for digestate certification, which are out of date and compared to Latvian requirements too strict, which leaves Estonian producers to unfavourable situation. In today's regulatory environment, obtaining/maintaining a certificate is very difficult if not impossible. The reason is that the specified parameters are unreasonably in the range, especially with an alternative equivalent activity, where liquid manure is taken directly from the farm to the fields.
Key takeaways: The presentations cleared the understanding of digestate related issues (certification, financial guarantees, etc) to the biomethane producers.

4. Topic: Roadmaps
Discussion: Ministry of Climate presented the draft Biogas Roadmap 2035. The draft based on the sustainable biogas potential implemented by 2 universities. Participants were critical towards the idea of the support to the bioeconomy industrial mini parks support measure, where biogas plants will be in industrial parks for mutual benefit. Participants were in opinion, that for agricultural biogas plant this measure is unrealistic, while industrial parks will not locate besides the farms, considering biosafety, labour force, other logistic (transport increase, etc).
Key takeaways: Participants expressed hope that Biogas Roadmap 2035 will be natural part of Estonian legislation with practical implications in the improvement of the (waste) regulation and budgetary allocations to the biogas sector and that it will be adopted by the Estonian Parliament/Government.
5. Topic: Hydrogen news
Discussion: The project „BalticSeaH2" was introduced, it will not affect to the biomethane production, as separate H2 pipe is planned between the Nordic and Baltic countries. Largely it will affect mostly the on- and off-shore wind parks and target is to produce H2 in Estonia and export it to the Germany, where the demand exceeds the supply.
Key takeaways: Participants got new knowledge on H2 sector development.

6. Topic: Biomethane consumption in housing
Discussion: The Estonian Gas Union has proposed difersifying the biomethane consumption in housing. Gas Union has introduced an additional definition into the regulation on minimum energy efficiency requirements for buildings—namely, “efficient gas heating”. Efficient gas heating would follow the same

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principles as efficient district heating: at least 50% of the gas used should be renewable, and the primary energy factor applied would match that of efficient district heating—0.65. **Key takeaways:** The Gas Union suggested an interesting idea for biomethane consumption diversification in housing to adopt similar renewable energy obligations as currently in transport.

Conclusion
The 6th HUB workshop was fruitful and contributed significantly to the GMU project results and to the biomethane national agenda. Discussions covered injecting biogas into the gas grid, selecting the RED3 methodology for accounting renewable fuels, certification and valorisation of digestate, the national biogas roadmap, and hydrogen cluster activities.

Latvia

4th Workshop

Date and Time, Location	18/06/2024, Biomethane production plant BovoGas
Participants	19

Method
Open roundtable discussion following the GreenMeUp presentation; moderated exchange between project developers, association members, ministry officials, and TSO representatives (where present); co-creation comments were collected live. Facilitated stakeholder dialogue following policy-related presentations, with participatory feedback gathered through group comments and direct Q&A with ministry representatives.

Workshop objectives
The main goal of this event was to support the development of the biomethane market in Latvia by engaging key stakeholders and presenting both national and European-level insights. More specifically, the objectives were to: • Present the first grid-injected biomethane project in Latvia (BovoGas) as a practical example and learning opportunity; • Share the findings of the GreenMeUp project regarding biomethane market conditions, challenges, and strategic directions in Latvia; • Facilitate dialogue among policy-makers, industry representatives, and technical experts to align on necessary policy tools and regulatory pathways; • Highlight the role of biomethane in decarbonizing key sectors, including transport and agriculture; • Promote cross-border biomethane trade and value chain integration within the EU. Expected results: • A clearer understanding of policy gaps and opportunities for biomethane deployment in Latvia; • Increased alignment between stakeholders on national targets, sector priorities, and investment needs; • Inputs for future strategic planning, including the NECP (National Energy and Climate Plan) and other national frameworks; • Strengthened collaboration between national and European partners, including transfer of knowledge from more developed biomethane markets;

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- Encouragement for further project development by showcasing successful implementation and business models.

Key takeaways

1. Topic: Grid operator response
Discussion: Participants discussed the barriers related to biomethane injection into the gas grid, including limited technical readiness, slow response times, and uncertainty about future infrastructure plans from the TSO. There was concern that TSOs may not see biomethane as a strategic priority, which creates hesitation in aligning projects with network expansion or maintenance.
Key takeaways:

- Need for **clear national targets and legal obligations** for grid access
- Biomethane producers lack confidence in long-term grid availability and rules
- Potential of **underutilized gas infrastructure** not being aligned with decarbonisation goals

Conclusions - Stronger regulatory push is needed to **define the TSO's role** in renewable gas development

- **Obligations to connect and cooperate** with biomethane producers must be clarified in law
- Establishing **transparent procedures and response timelines** is essential for project planning

2. Topic: Lack of clear policy direction and integration into national strategies
Discussion: Participants raised concerns about insufficient inclusion of biomethane in Latvia's National Energy and Climate Plan (NECP) and the absence of clear, quantitative targets for biomethane production and use. There was a shared perception that biomethane is politically undervalued, and that cross-sector coordination (agriculture, energy, transport) is lacking. Some stakeholders expressed frustration that without policy clarity, investments remain high-risk.
Key takeaways:
NECP needs to be more ambitious and specific regarding biomethane

- Lack of coordination between ministries (e.g., agriculture, climate, economy)
- Importance of setting binding targets for biomethane injection and use
- National strategies must address grid access, incentives, and sustainability criteria simultaneously |

Conclusions - Immediate need to revise NECP with concrete biomethane goals

- Creation of inter-ministerial working groups suggested
- Latvia risks missing EU-level opportunities and funding if policy remains vague

3. Topic: Market uptake challenges and uncertainty from potential offtakers
Discussion: One of the core challenges discussed was that potential offtakers (e.g., transport companies, operators, municipalities, industrial users) are often unaware or unconvinced about the value, reliability, and long-term availability of biomethane. Participants pointed out a lack of structured demand-side incentives, poor awareness campaigns, and no clear pricing signals. This results in hesitation to commit to purchase agreements, which are essential for investment security.

Key takeaways:
- No offtake guarantees = no project bankability
- End-users (especially public fleet operators) need policy pressure or support to choose biomethane
- Greater visibility and communication of successful case studies is needed
- Stakeholders support introducing green gas quotas or carbon credit schemes to drive demand |

Conclusions - Stimulating demand is equally critical as securing supply

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Conclusion
The workshop significantly contributed to strengthening the visibility and relevance of GreenMeUp (GMU) results within Latvia's biomethane policy landscape. By bringing together stakeholders from ministries, industry, and the research community, the event created a unique space for evidence-based dialogue and co-creation of policy priorities. GMU results—particularly the SWOT analysis, feedstock assessment, and market barriers—served as a structured foundation for discussion and enabled participants to align on common challenges and action points. The workshop helped: • Highlight gaps in the National Energy and Climate Plan (NECP) regarding biomethane; • Trigger conversations between sectoral ministries (agriculture, energy, climate) on better coordination; • Reinforce the importance of setting national biomethane targets and demand-side policies; • Build momentum for more ambitious, strategic planning in line with EU biomethane goals. Overall, the event helped translate GMU research insights into policy-relevant recommendations, increasing the likelihood of their integration into Latvia's national energy and climate framework.

5th Workshop

Date and Time, Location	13/02/2025, Islande Hotel, Riga
Participants	22

Method
The discussion was guided through direct engagement, including targeted questions posed to experienced producers. To ensure active participation and gather valuable feedback, participants were encouraged to share their insights through open discussions, Q&A session, and interactive exchanges.

Workshop objectives
The main goal of this event is to present the final market integration indicators, including key performance results (KPIs) from target countries, to provide Latvian biomethane producers with valuable market insights. We aim to consolidate and share findings from the FCM analysis, covering society, market, and policy perspectives, to enhance the understanding of biomethane market development. We see that the workshop serves as a platform to collect additional information, ensuring a comprehensive assessment of market needs and barriers. A key objective is to engage stakeholders encouraging their active participation in the impact phase of the GreenMeUp project. By involving decision-makers, we seek to shape future policy interventions that will support the growth and integration of biomethane into the energy market. Ultimately, this workshop will contribute to strengthening the impact of GreenMeUp results on Latvia's policy and legislative agenda, ensuring better support for the biogas and biomethane sector.

Key takeaways
1. Topic: Problems with shareholders like TSO **Discussion:** In Latvia, the Transmission System Operator (TSO) has a significant impact on biomethane producers. They are responsible for issuing Guarantees of Origin (GO) and approving biomethane producers for injection into the natural gas grid. However, the process is burdened with excessive bureaucracy and prolonged approval timelines, creating significant challenges for market development. **Key takeaways:**

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* More seminars should be organized for biomethane producers to share experiences and best practices. * The ministry should be involved in addressing critical issues to ensure effective policy support and solutions. **2. Topic:** Slow development of biomethane **Discussion:** The slow development of biomethane legislation hinders market growth and investment in the sector. Lengthy regulatory processes, bureaucratic barriers, and unclear policy frameworks create uncertainty for producers and investors. A lack of coordinated government action and delayed implementation of supportive measures further slow down biomethane integration into the energy and transport sectors. Accelerating legislative progress is crucial to unlocking the full potential of biomethane as a sustainable energy source. **Key takeaways:** Lengthy approval processes and excessive bureaucracy slow down biomethane project development, discouraging investors and producers. Example – The existing road infrastructure continues to hinder the development of biomethane pipelines. **3. Topic:** Lack of professional workshops **Discussion:** There are too many industry players with different background, and it would be much more effective to participate in highly constructive and dedicated seminars for each issue. **Key takeaways:** * Organizing dedicated workshops at least 3-4 times per year on topics such as biomethane injection into the natural gas grid, available support for biomethane producers, and more. * Organise workshops for transport sector – advantages for buses and cargo with biomethane.

Conclusion
The workshop played a crucial role in advancing the biomethane national agenda by facilitating knowledge exchange, fostering collaboration among key stakeholders, and providing actionable insights based on GMU results. It helped align industry efforts with policy objectives, identified challenges and opportunities for biomethane integration, and highlighted available support mechanisms. By bringing together experts, policymakers, and industry leaders, the event strengthened the foundation for future developments in biomethane production, distribution, and regulatory frameworks.

6th Workshop

Date and Time, Location	9/07/2025, online
Participants	35

Method
Open discussion with questions and answers

Workshop objectives
The main goal of this final GreenMeUp project seminar was to bring together key national stakeholders to discuss the current state and future prospects of the biomethane market, both in Latvia and in the broader EU context. By presenting the latest policy developments, market trends, and national support mechanisms, the event aimed to strengthen stakeholder awareness, foster dialogue, and encourage cross-sector cooperation. Specifically, the seminar was designed to: • Provide up-to-date insights on EU policy developments relevant to biomethane, • Share the current status and growth potential of the biogas and biomethane market in Latvia and Europe,

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- Present the legal framework and support tools for biomethane in the transport sector,
- Highlight the main outcomes and lessons learned from the GreenMeUp project.

Expected results include:

- Improved understanding of the regulatory and market landscape for biomethane,
- Stronger engagement of Latvian stakeholders in the European biomethane dialogue,
- Identification of opportunities for further development and collaboration,
- Enhanced readiness for future initiatives and policy implementation.

The seminar marked a key milestone in consolidating national efforts and connecting them to the wider European biomethane strategy.

Key takeaways

1. Topic: How to strengthen the development of the biomethane market in Latvia, based on EU policy objectives and national capabilities

Discussion: The final seminar of the GreenMeUp project concluded with a moderated discussion focused on Latvia's readiness to scale up biomethane production and integrate it into the national energy and transport systems in line with EU targets.

Key takeaways:

- **Policy alignment and urgency:**
  Stakeholders agreed that Latvia must act swiftly to transpose RED III and align with the REPowerEU target of 35 bcm of biomethane by 2030. There is currently no national biomethane production target, which hampers long-term planning and investment.
- **Regulatory and legal gaps:**
  A lack of clear legal obligations for gas grid operators was identified as a barrier. Participants stressed the need for binding rules to ensure timely grid access and cooperation with biomethane producers.
- **Infrastructure concerns:**
  Technical readiness of the gas grid is limited, and the role of TSOs remains unclear. Concerns were raised about slow response times and missing infrastructure expansion plans. Transparent procedures and response timelines are essential for developers.
- **Stakeholder cooperation:**
  Effective biomethane market development requires better coordination between ministries, regulators, TSOs, local authorities, and project developers. Municipalities and farmers were recognized as key actors for decentralised production.

Conclusion

The final GreenMeUp workshop served as an important platform to bridge the project's European-level insights with Latvia's national policy and market context. By bringing together representatives from ministries, the gas sector, project developers, and associations, the event enabled open and constructive dialogue on the key barriers and opportunities for biomethane development in Latvia.

Key contributions of the event to the national agenda included:

- Raising awareness of EU policy developments (e.g. RED III, REPowerEU, ETS2) and their relevance to Latvia's energy and climate planning;
- Presenting the main GreenMeUp results, including recommendations on regulatory frameworks, stakeholder cooperation, and infrastructure access;
- Facilitating a focused discussion on grid-related challenges and the need for stronger legal obligations for TSOs;
- Encouraging ministries and regulators to consider biomethane as a strategic element in future national energy and transport planning;

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- Creating momentum for a more coordinated national approach, with calls for a clear biomethane development strategy, support instruments, and long-term targets.

As a result, the workshop strengthened the visibility and relevance of the GreenMeUp outcomes and helped lay the groundwork for future national actions aligned with EU decarbonisation goals.

Greece

4th Workshop: GreenMeUp 4th workshop

Date and Time, Location	29/05/2025, online
Participants	42

Method
Questions and answers

Workshop objectives

The main objective of this workshop was to engage with all key stakeholders — members of our Market, Policy, and Society Hubs — to discuss the proposed policy measures we have developed as part of the project's progress. The session served as a consultation forum to gather stakeholders' views, perceptions, and recommendations.

By facilitating direct interaction between market actors and policymakers, the project also aimed to ensure that industry insights and priorities were effectively communicated and taken into account during the legislative process.

The expected outcomes focused on updating, refining, and finalizing the policy framework and measures, ensuring that the project plays a central role in shaping and supporting our national policy development.

Key takeaways

1. Topic: Policy framework in Greece: What is absolutely necessary.

Discussion: Discussion was focused on the memebrs'opinion on GREENMEUP results and on the first draft of the law that was being circulated for private consultations to key market actors -our members being included.

Key takeaways:

A clear and inclusive framework is required—one that involves all stakeholders and covers the entire value chain, from the collection of raw materials to final consumption, including all types of incentives, whether financial or not. The framework should link the ministries of Environment and Energy; Rural Development and Food; Transport.

Such framework must include measures that ensure **a stable business environment, with financial support for the operation of the units**, which were further discussed in the topics below.

There must also be clear and specific provisions to **prevent overlapping responsibilities** between operators and producers, or between the two operators themselves—namely, the transmission system operator and the distribution network operator.

Additionally, there must absolutely be **criteria for the connection of biomethane units to both the transmission and distribution systems**, particularly for units located close to both networks. This issue should be addressed in the legislation.

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There has to be provisions regulating connection to the grid issues and cost allocation to discourage excessively long distances relative to the quantity produced.

In addition, a key element for developing the biomethane market is the use of the digestate residue as fertilizer. Relevant legislation is urgently needed.

The biomass supply must be secured through legislation on its collection.

Biomethane plants, whether existing or new, should be **hybrid** and produce electricity with duration and timing chosen by the Producer.

The definition of "**green hydrogen"** should be revised, because through biomethane reforming, we can produce hydrogen with even negative carbon intensity.

2. Topic: Policy framework in Greece: Which financial mechanisms.
Discussion: Discussion was focused on which financial mechanisms our market stakeholders prefer.
Key takeaways:
Feed-in tariff or feed-in premium were preferred, rather than competitive bidding processes, which could be adopted at a later stage once the market matures, in order to avoid delays that would move us away from the targets of the National Energy and Climate Plan (NECP) for 2030.
However, it was stated that Feed-in Premiums or Feed-in Tariffs could no longer be accepted under current EU policies.

Thus we need to move toward **an auction process** in order to establish a support system, because the current law doesn't seem to provide one. Such an auction process should directly link to the biomethane target, as in Italy—a model case. If the auctioned capacity is too large, then necessarily the support system price per MWh will have to be high—something we see in Italy. So, emphasis must be placed here to ensure that the auctions offer sufficiently large capacity so that, based on the law of supply and demand, the resulting price is high enough to support our investment activity.

A form of **net metering (so to speak)** should also be possible in the biomethane sales process. This would allow each producer/unit to inject biomethane into the grid and sell it via virtual transfer mechanisms on the European international market. This would boost the prices we can achieve

If support cannot be provided in the ways mentioned, then there must be an **environmental premium** based on the type of waste used. Not all biomethane is the same, so a carbon intensity should be determined for each product through an MRV (Monitoring, Reporting, and Verification) process. Silage is not the same as waste management.

3. Topic: Policy framework in Greece: Quotas and mandatory obligations for consumers regarding biomethane. Should be preferred or not?
Discussion: Extensive discussion was focused on whether quota should be included in our policy legislation framework.
The draft law follows the approach of offering incentives, as is the case in the United States, rather than enforcing quotas.
Key takeaways:
Opinions differ here:

Arguments in favor of quotas:

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Introduction of quotas not just in shipping, but also on land. Reference is made to the successful example of many EU countries that have established quotas under RED II and soon RED III, for energy suppliers (e.g. vehicle fueling stations). These systems have led to the creation of a new "product" — overcompliance. The more green fuel a supplier delivers through its stations, the more added value (overcompliance credits) it generates, which it can then sell to other providers.
This market-based mechanism can, on its own, support the entire fuel production chain, without relying on operational subsidies or other forms of aid. This is something that will inevitably come to Greece; our goal should be to push for its early adoption.

If there were a quota system, even if the domestic market could not meet the obligations, there would be strong interest from foreign producers because this is roughly how the biomethane market currently operates in Europe. In this way, we could also attract energy from abroad, just as the European markets do today.

Quotas should be adopted for natural gas suppliers, requiring that a certain percentage comes from biomethane, or alternatively, tax incentives should be introduced to stimulate demand

Arguments against:
A quota system could be introduced, with penalties if the consumer—such as an industrial facility—fails to meet it. However, if the corresponding production is not available, only penalties will be applied. This is similar to aviation fuels, where the mandatory percentages set by the European Commission may not be achieved, and the penalties are passed on to the consumer (e.g. through higher ticket prices).
The second issue is cost: if you impose a quota on a product whose production cost is high—this doesn't necessarily apply to biomethane, whose cost is manageable, but more so to lignocellulosic gasification—you may force consumers to pay excessively, which could even lead to industrial shutdowns due to loss of competitiveness in their final products.

In addition, such a mechanism would create the risk of unnecessary inflation. That is why there is opposition to a technology-specific target. For example, there are targets for RFNBOs (Renewable Fuels of Non-Biological Origin), so why shouldn't there be broader targets for renewable energy in general? A 14% renewable energy target can include any type of renewable energy.

4. Topic: Policy framework in Greece: Certification.
Discussion: Discussion was focused on whether and how certification should proceed.
Key takeaways:
The cross-border trade of biomethane will take place under the umbrella of the Union Database (UDB). Therefore, all quantities of biomethane and other renewable gases will be certified according to the voluntary schemes that are already in operation.

The Union Database was launched in Greece on February 27, but currently only for aviation fuels. Efforts are underway to also include all DSOs (Distribution System Operators), TSOs (Transmission System Operators), and other key gas market participants, with the same applying soon to biofuels.
A revision of the sustainability certification framework and greenhouse gas (GHG) emission reduction criteria is being prepared. It will be a core framework with strict rules, such as on-site inspections of production units in the initial phase, followed by quarterly re-audits by an independent team of auditors.

The Ministry is open to suggestions, and all stakeholders will be informed, to ensure the process is not overly burdensome or bureaucratic.

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We also need a regulatory framework addressing **taxation issues**, special levies, customs procedures, etc., to give companies legal and economic certainty—so they can certify what they produce and secure the price they need.

Conclusion
By facilitating direct interaction between market actors and policymakers, GREENMEUP ensured that industry insights and priorities were effectively communicated and taken into account during the legislative process, that is under way.

5th and 6th Workshop: GreenMeUp 5th workshop

Date and Time, Location	16/06/2025, physical
Participants	80

Method
Questions and answers

Workshop objectives
The main objective of this workshop was to present the final results of the GreenMeUp project, as well as to exchange views on the policies and strategies that will support the strengthening of biomethane penetration in the energy market. Special focus was also placed on the technological developments for biomethane production at EU and global level More specifically, participants had the opportunity to examine (a) the prospects for the development of biomethane in the Greek and European energy market, (b) the legislative framework and market models that can support its wider dissemination and (c) the latest technological developments in the field of biomethane production and use. The meeting brought together policymakers from the related ministries (Ministry of Environment and Energy, and Ministry of Rural Development and Food) , executives from the Regulating Authority RAAEY and the Hellenic Electricity Distribution Network Operator (HEDNO), leading stakeholders in the biogas market, potential investors in biomethane and bio-LNG projects and operators of natural gas distribution and transmission networks, and finally technology providers to support the building of the first biomethane plants in the country. **The expected outcomes** focused on finalizing the policy framework and measures, ensuring that the project plays a central role in shaping and supporting our national policy development.

Key takeaways
1. Topic: Biomethane in Greece: How this market is now regulated by the Public Authorities **Discussion:** Discussion was focused on the current activities and future perspectives of the Greek Public Authorities **Key takeaways:** 1. The draft of the new Law on biomethane introduces, for the first time: – provisions to establish a comprehensive and coherent framework for their production, – injection into the National Natural Gas System (NSGS) and distribution networks, – availability to end-users not connected to the system or distribution networks, and use as motor fuel.

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- The draft law includes a special provision for guarantees of origin for biomethane produced from RES.
- The draft law also addresses the injection of hydrogen into geographically confined hydrogen networks in line with REPowerEU objectives.
- Through a series of incentives and disincentives, it aims to push biogas units to be converted into biomethane units, which in turn will be utilized for the decarbonization of the natural gas sector as well as transport sector, with additional applications in the shipping and aviation sectors.

2. The Ministry of Environment and Energy is already in the process of drafting a study, which has been contracted, for the creation of a separate collection system by obligated producers in hotels and catering. The body will seek solutions everywhere and is expected to be operational by the end of 2026", the General Director mentioned. That would facilitate the biogas/biomethane producers in purchasing the organic fraction of the municipal wastes for their plants.
3. The Ministry of Rural Development and Food, is making efforts to strengthen biogas in the agricultural sector. Through the implementation of the new Common Agricultural Policy (CAP), incentives are provided to producers for the use of digestate in their crops. Today, approximately 90 anaerobic digestion units are active in Greece, which contribute decisively both to the management of produced agri-food waste and to the production of biogas. Therefore, the Ministry of Rural Development and Food is willing to exploit the potential of biogas in the agri-food sector, which will reduce production costs and provide more benefits for the economy and the environment.
4. The Regulatory Authority for Energy, Waste and Water (RAAEY) has commissioned a study and is working on a plan of economic incentives that will reward the flow of waste to the biogas/biomethane units. In fact, as the vice-president emphasized, the proposal as a whole will be ready in September and will be submitted to the Ministry of Environment and Energy in order to examine and proceed with a relevant legislative initiative.
5. One of the highlights of this one-day event was the presentation of the first compressed biomethane production unit in Greece that has been successfully completed, with the first quantities of biomethane—containing over 97% methane. The unit is now ready for biomethane production, its compression, and transportation of bio-CNG to DEPA Commercial's Fisikon fueling stations to be used as a vehicle fuel, providing a clean and cost-effective alternative for transportation. Biomethane will be also available to consumers in areas not connected to the natural gas grid, or to be injected into the national gas network.
6. HABIO and the other biogas plants objected to the draft Law on the following main points:
   - The proposed Law imposes all thermal loads of a biomethane plant to be covered by the produced heat of the plant, which would cut biomethane production of the plant by 15%, further straining already tight revenues.
   - the time limit on electricity generation from biomethane units, capped at 12 hours per day would reduce income and require higher tariffs to ensure sustainability.
   - the association criticized the 50-50 cost-sharing model for connecting units to the gas grid,
   - Finally, HABIO highlighted the lack of a clear strategy for CNG and bioLNG.

Commonly recognized as the biggest problem is the issue of raw material collection, with the political leadership of the Ministry of Environment and Energy still not having a specific answer to the issue despite the plans that are being formulated. The issue, as market key actors commented, requires special attention because the existing anaerobic digestion units are already facing difficulties in finding raw material. Even more so if there are new units.

2. Topic: Policy framework Europe and best practices.

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Discussion: Discussion was focused on the best practices existing in the 10 more advanced countries and in Italy in particular
Key takeaways:
The Seven key policies that act as best practices according to EBA are:
1. Set an official stable vision for the sector's development, including clear political or legal targets
2. Avoid isolated schemes – they are insufficient without addressing other barriers.
3. Set up direct and stable support mechanisms with a phase-out plan
4. Enable market access through right to inject in gas grids and GO issuance
5. Improve bankability of projects through cost-sharing of pipeline CAPEX.
6. Set specific targets & tax reduction to spur demand growth in transport.
7. Integrate with agricultural policy through co-product marketing

In Italy, as presented by CIB, from September 2022 there is a strong support for biomethane production with a Decree that includes incentive mechanisms of an estimated budget of 2.8 billion € over a 15-year operational period. The new incentive mechanisms combines two closely related factors: capital incentives and feed-in tariffs, while it also includes feedstock rules for biomethane production.

3. Topic: Policy framework in Greece: GREENMEUP results s
Discussion: The presentation of the final results focused on the promotion of biomethane in the EU, analyzing social perceptions, policy needs, and market potential in 11 countries. A key objective was to understand the factors affecting the public and stakeholders' views on biomethane, particularly in terms of entrepreneurship, policy formation, and social acceptance. Field research was conducted with around 2,200 respondents and involved additional stakeholder input using methodologies like surveys and Fuzzy Cognitive Maps, which helped visualize the relationships between influencing factors in complex systems.
Key takeaways:
- Findings indicated a limited lack of awareness about biomethane among the public and a strong potential for development.
- Recommendations for production focused on maximizing agricultural and organic waste, promoting membrane-based upgrading technologies, and enabling grid injection.
- Innovative technologies and sustainable raw material supply chains were emphasized.
- On the demand side, key strategies included increasing awareness of biomethane's environmental benefits, integrating it with transport and heating uses (e.g., Bio-CNG and Bio-LNG), and boosting infrastructure and workforce skills to address technical and operational barriers.
- To overcome market and regulatory hurdles, the project proposed financial tools (e.g., subsidies, investment support), streamlined permitting processes, and a cohesive policy framework linking agriculture, waste management, energy, and transport.
- A central theme was the need for consistent national policy backing and public engagement to avoid fragmented legislation.
- Stronger national climate and renewable targets, along with informed stakeholder participation and transparent data collection, were seen as vital for scaling up biomethane's role in Europe's energy transition.

4. Topic: Technological options for producing biomethane.
Discussion: Discussion was focused on Technological options for producing biomethane
Key takeaways: Leading European technology service providers, including Gruppo AB Energy Sustainability, BIOGEST, Bright Renewables, Prodeval and Sysadvance Group, presented the latest developments in the construction of biomethane plants, showing the existence of mature technologies.

Conclusion

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By facilitating direct interaction between market actors and policymakers, GREENMEUP ensured that industry insights and priorities were effectively communicated and taken into account during the legislative process, that is under way. In this final workshop, press representatives were invited not only to help raise awareness of biomethane, but also to inform stakeholders across the entire biomethane value chain about the proposed market mechanisms, necessary incentives, and financial tools aimed at ensuring a stable business environment and sustained operational support for biomethane units

Poland

4th Workshop: 4th stakeholder workshop

Date and Time, Location	27.06.2024, hybrid (Organiser: PIGEOR)
Participants	18 (in-person 17 and 1 online)

Method
Guided discussion on presented topic, every attendant had an opportunity to express her/his opinion

Workshop objectives
Key objectives of this workshop: - Presentation of biomethane market situation in EU, GreenMeUp chosen target countries and in Poland - Presentation of biomethane certification rules (important for national stakeholders) - Main objectives were to present results from the SWOT analysis (based on work which started in previous stakeholders meeting) and validate key strategic actions. - Introduction of FCM methodology and implementing it with Polish stakeholders Expected results: - Discussion on the SWOT analysis results and how use them for promotion of biomethane and development of biomethane national strategy - Implementation of FCM methodology according to GreenMeUp project for identification of national biomethane market limitations and possibilities - To present results from the 3 FCM (Society, Market, Policy) and validation of results by complementing factors and connections. Finally, to engage actors from all three hubs (society, market, policy) and raise their interest to participate in the impact phase of GreenMeUp project (Definition of future policy interventions and dissemination of key messages to decision-makers). During this workshop we have shared with the committee valuable experiences and examples of good practice from the Czech Republic and Estonia (based on GreenMeUp reports and study visits as well as presentations from different GMU webinars), inspiring Polish stakeholders to move forward. Results from the SWOT analysis (based on work which started in previous stakeholders meeting) were presented for validation of key strategic actions (WP3).

Key takeaways
1. Topic: SWOT analysis results **Discussion:** Results from the SWOT analysis (based on work which started in previous stakeholders meeting) were discussed and some more elements were added by stakeholders. Key strategic actions for biomethane market development were together defined.

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Key takeaways: Results of SWOT analysis are excellent base for preparation of biomethane development strategy in Poland. GMU team will start drafting of such document for Poland. **2. Topic: Biomethane certification** **Discussion:** Key aspects of biomethane certification were presented based on experience of author with certification of Czech biogas and biomethane plants as well as national perspectives. It was an extremely valuable insight that enriched knowledge of Polish stakeholders about standards and regulations. **Key takeaway:** Certification of biogas and biomethane installations is an important issue and we have competences in Poland for doing it, based on EU schemes as well as national ones (INIG system). It is important to share knowledge with biogas/ biomethane stakeholders. Author of presentation will prepare report on that subject within GreenMeUp project.

Conclusion
Participants decided to elaborate strategy plan for biomethane market development and promote it widely. Among the speakers, we had the honour of hosting Pawel Jamrozek from GreenMethane, who presented the prospects for the development of the biomethane market in Poland from investor perspective. Magdalena Rogulska shared with the committee experiences and examples of good practice from the Czech Republic and Estonia (based on GreenMeUp reports and study visits as well as presentations from different GMU webinars), inspiring Polish stakeholders to move forward. Izabela Samson-Bręk from the Institute of Environmental Protection discussed key aspects of biomethane certification, presenting both Czech experience and national perspectives. It was an extremely valuable insight that enriched knowledge of Polish stakeholders about standards and regulations. Finally, Marta Wierzbowska-Kujda from magazine "Teraz Środowisko" led an FCM (fuzzy cognitive map) workshop (based on methodology delivered by CRES within GMU project), providing participants with tools for intelligent modelling of decision-making processes. It was a practical and engaging segment that allowed participants better understanding of the complexities of the biomethane market.

5th Workshop: 5th stakeholder workshop

Date and Time, Location	27.11.2024, hybrid (Organiser: PIGEOR)
Participants	14 total (13 in person, Ronja Wollnik DBFZ online

Method
Guided discussion on presented topic, every attendant had an opportunity to express her/his opinion

Workshop objectives
Key objectives: - Presentation of actual project results by DBFZ, project partner (Task 1.6) - Elaboration of the biomethane market development strategy in Poland Expected results: - Proposal of the biomethane market development strategy in Poland (for wider discussion with other biomethane market stakeholders)

Key takeaways
1. Topic: biomethane market development program **Discussion:** Based on previous meetings and discussions, the GreenMeUp project team has prepared the first draft of the Program for the Development of the Biomethane Sector in Poland. During the meeting

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first comments has been gathered. Discussion addressed also the directions of development of the biomethane market in Poland. Version including stakeholders comments was prepared by GMU team and send in December to them. Participants were asked to analyse carefully the draft and provide their comments, suggestions and additions by January 7, 2025. Created document will be presented to the wider group of stakeholders to gather their comments and inputs to this document. **Key takeaways:** Biomethane market development plan is the main document needed for starting biomethane implementation on Polish market. The actually developed document is a draft version and will be further elaborated, based on discussion with broader group of stakeholders (biogas and biomethane sector). Final version will be presented to Ministries (Climate and Agriculture) as well as Parliament and Senat.

Conclusion
The main point of the workshop was presentation of draft version of Biomethane market development plan. It was important to start work on this document; work will be continued within next meetings. Such document is important for biomethane development in Poland. We hope it will be useful for Ministries and whole sector.

6th Workshop: Przyszłość rynku biometanu w Polsce/ Future of biomethane market in Poland

Date and Time, Location	05.06.2025, hybrid (Organiser: PIGEOR)
Participants	16 (in that 1 online)

Method
Guided discussion on presented topic, every attendant had an opportunity to express her/his opinion.

Workshop objectives
It was the final meeting of stakeholders within GreenMeUp project so the main goal was to present both: results of the project but also results of national stakeholders activities. From national perspective the most important result was elaboration of "Biomethane sector development program in Poland" and wide promotion of it within sector and within main actors influencing biomethane market (especially decedents). (https://www.pigeor.pl/aktualnosci/program-rozwoju-sektora-biometanu-w-polsce) As the effect the vice Ministry of Climate Mr. Motyka (responsible for RES sector) invited representatives of PIGEOR to present this document to them and discuss it. During this final meeting of national stakeholders overview of actual results of GMU project was presented, especially was stressed availability of deliverables from WP1 (Framework conditions and market dynamics in lead countries). Also information about deliverables in which PIGEOR was engaged was given. The main goal was to stress how important is role of policies and support schemes for the development of national markets based on e.g. presentation from policy workshop in Leipzig European Biomethane Market Today: The Role of policies and support schemes, 25-3-2025, policy workshop Leipzig

Key takeaways
1. Topic: Biomethane plant connections to the grid **Discussion:** Biomethane plant connections to the grid is one of hot subjects for biomethane sector development. On basis of presentation showing examples from EU countries and presentation done by

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Polish expert showing national conditions participants discussed what are the main problems and how can be overcome. **Key takeaways**: It was stressed that situation in Poland is slowly changing, main players Gaz System and PSG are e.g. presenting maps with potential possibilities for injection points, however it is still difficult to get conditions for injecting (e.g. very long time for administration procedures). **2. Topic: Biomethane sector development program in Poland – summary** **Discussion:** Final version of Biomethane sector development program in Poland was presented to the stakeholders as well as method of its promotion. This document was elaborated on basis of previous meetings and stakeholders input (both at meeting and after with comments to the document). Now was the moment for discussion an accepting final version for public distribution. **Key takeaway:** Biomethane sector development in Poland was accepted for public distribution. **3. Topic: How to prepare a biogas and biomethane plant project to make it bankable?** **Discussion:** It was very interesting presentation showing point of view of banks. The main problems from point of view of banks were presented and how investors should overcome them. **Key takeaways:** It was very good lesson for potential investors to understand what aspects are important for getting money from bank for financing biogas and biomethane projects.

Conclusion
After this workshop it was clear that for development of biomethane market in Poland, it is necessary to immediately adjust regulations, focus on cost efficiency, promote sustainable resource management, and develop infrastructure. Following the practices of such countries as Denmark and France can provide valuable inspiration, especially by introducing feed-in tariffs, shortening administrative procedures, and using cost- sharing schemes. It is also crucial to set clear emissions reduction targets and invest in research into new technologies and business models. Prepared within GMU "Biomethane sector development program in Poland" was finally accepted by stakeholders and decided to distribute it among main national actors: Ministry of Climate, Ministry of Agriculture, KOWR and lot of others.

Spain

4th Workshop: SWOT analysis and FCM

Date and Time, Location	27 June 2024, hybrid
Participants	9

Method
1_SWOT analysis presentation 2_Analyzed it 3_Discussed it (asking for their feedback, one-to-one) 4_And with the feedback of the stakeholders defined the strategy

Workshop objectives
The objective of our discussion with stakeholders during the 4th Hub´s workshop is establish the top 5 strategies that are most pressing and have resulted to be most necessary.

Key takeaways

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Strategy 1 **Discussion:** Adjust of realistic Roadmap with clear biomethane targets, in sync with the RePowerEU objectives **Key takeaways:** Adjust of realistic Roadmap with clear biomethane targets, in sync with the RePowerEU objectives **Strategy 2** **Discussion:** Implement a consumption incentive system with quotas for gas traders: increasing percentages over time **Key takeaways:** to guarantee the achievement of MWh of biomethane in the system, with traders being obliged to have their quota of biomethane (as with liquid biofuels). **Strategy 3** **Discussion:** Increase intensity of coordination to integrate the solutions that biogas/biomethane brings to the problems of Environment, Agriculture, Livestock and Demographic challenge of depopulation **Key takeaways:** to coordinate efforts to integrate the solutions that biogas and biomethane offer to the challenges of the environment, agriculture, livestock farming and depopulation. It is important to focus on the positive externalities: biogas and biomethane represent not only an energy solution, but also a comprehensive response to the environmental, agricultural, livestock and demographic challenge **Strategy 4** **Discussion:** Promote a common framework for cooperation and dialogue between stakeholders: producers, investors, traders, final consumers **Key takeaways:** to face one aspect that can affect the implementation of new projects is social opposition, which is why collaboration between developers, owners of gas system facilities, gas retailers, the agricultural and livestock sector, local authorities, autonomous communities, civil society and other agents involved, from an early stage, can help to overcome this conflict **Strategy 5** **Discussion:** Propose a system of economic and fiscal incentives for the development of projects: development of investment incentive mechanisms (FiT, FiP, tax benefits, etc.) **Key takeaways:** to take advantage of the most effective mechanism to develop biomethane in Spain, in the same way as has been done in other European countries: creating a stable framework and a defined revenue system. In addition, it would be beneficial to incentivize small and medium-sized projects

Conclusion
The stakeholder's participation was very active and, indeed we had very fruitful discussions about the strategies and what placement should be in the TOWS matrix.

5th Workshop: Market integration indicators

Date and Time, Location	26 Nov 2024, hybrid
Participants	14

Method
1. Base document for initial discussion 2. Discussion + brainstorming (asking for their feedback, one-to-one) 3. Joint conclusions 4. And with the feedback of the stakeholders define the strategy of final conclusions

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Workshop objectives
Key objectives • Presentation of final market integration indicators and consolidated results from the FCM (Society, Market, Policy). • Engage actors from all three hubs (society, market, policy) and raise their interest to participate in future policy interventions and dissemination of key messages to decision-makers. Expected results • Disseminate with policy, market and society stakeholders key findings from the project (FCM + KPIs), using a benchmark of target countries (KPIs, FCM, general status). • Strengthen the impact of GreenMeUp results on the current policy/legislative agenda for biogas and biomethane in the country. • Newer results + best of recommendations included.

Key takeaways
Strategy 1 **Discussion:** Good practices for improve Social acceptance: Dialogue, transparency, communication, citizen participation **Key takeaways:** • It is advisable to define from the beginning the participatory strategy of the community to which the project is directed. Informing about the project when everything is already defined creates a feeling of imposition of something foreign, no matter how good the project is. • One of the bases of the success of many collective biogas plants is the development of the project from the bottom up, seeking the participation of local agents in the early phases of the project, incorporating their concerns and needs, and periodically reporting on the progress in the design and in the executive project. For this reason, we advocate the maximum possible transparency and the establishment of spaces for citizen participation that are fruitful. • A biogas plant in a rural environment affects the nutrient management plans of livestock farmers and, therefore, the project must include and influence this plan. This affects the planning of the agricultural use of the digestate, which must improve the sum of the individual management plans of each farm. For this reason, it is convenient to seek advice and even include in the project specialists in agricultural fertilization, as well as communicate from the beginning that the project will also affect this aspect. • In general, an attempt will be made to generate a "feeling of citizen participation" in the development of the project, to promote integration and social acceptance, so that they feel part of it and trust is generated. • Avoid excessively technical language with local agents and provide practical examples, so that they can visualize what worries them. It is key that the approach to local agents is empathetic, rather than offering information, what they expect is to be able to express their concerns. **Strategy 2** **Discussion:** Good practices for improve social acceptance Environmental commitment, respect for the environment **Key takeaways:** • The plant must reduce the risk of water contamination by nitrates, as well as emissions of ammonia, nitrous oxide and methane, compared to the previous situation in the area of influence of the facilities.

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- Therefore, the project must include the corresponding actions and inform local stakeholders about this in its initial phases, both so that they feel involved and so that they understand the project as an environmental improvement that will benefit them.
- As the project develops and its degree of definition increases, the estimated and justified quantification of the reduction of emissions and the risk of water contamination must be reported.
- The facilities must be integrated into the environment, with minimal visual impact on the landscape, through the use of appropriate materials.
- In order to minimise the impact on the environment of noise, emissions, traffic and other disturbances during the operation of the plant, appropriate protections will be adopted, as well as the corresponding modifications.

Strategy 3
Discussion: Good practices for improve social acceptance:
Benefits for the community
Key takeaways:

- Apart from reporting on the environmental benefits of the plant, also report on the economic benefits of the project for the community, in terms of the activation of the local economy, generating employment, avoiding the depopulation of rural areas and activating investment in infrastructure in the area, and try to obtain a realistic quantification.
- Study, and adopt where appropriate, actions to return the plant's activity to the community, so that the community can benefit from the plant's products.
- Enable livestock farmers and other local agents to participate in the shareholding, in the promotion group or in another type of participation in the plants.
- Ensure that part of the economic benefits are allocated to environmental improvements on the farms (changes to reduce storage time in accommodation, for example) and to other local agents, such as improvements in infrastructure and other key economic benefits.

Strategy 4
Discussion: Good practices for improve Social acceptance:
Appropriate location of plants
Key takeaways:

- Locate the facilities in environments where the impact on flora and fauna is minimised, especially without affecting protected areas of cultural or natural interest.
- Apart from the above, locate the plant in an area:

✓ that has the approval of the community,
✓ that complies with all environmental and social requirements,
✓ that allows access to water supplies, electricity and connection to the gas network,
✓ that is located at a minimum appropriate distance from inhabited areas or other businesses,
✓ that has access to roads that generate the least impact due to noise and on the road infrastructure itself,
✓ that minimises the risk of impact due to odours.

- It may be appropriate to use modelling and analysis tools:

✓ to simulate improvements in the elimination/dispersion of odours, to predict the location of emissions and effects on soil quality,
✓ to select optimal locations.

Strategy 5
Discussion: Good practices for improve social acceptance:
Efficient waste management/safe storage of raw materials
Key takeaways:

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- One of the areas of the plant that requires the greatest protection must be the infrastructure necessary to manage the waste collected and treated at the facilities. This includes the correct storage of raw materials in properly designed facilities that prevent the generation of odours, atmospheric emissions or other soil and water contaminants that affect the plant environment.
- Adopt sanitary control measures for trucks, especially if they collect from farms, with disinfection on each trip. Never use a trip to load from different farms, in order to avoid cross-contamination.
- Plan the necessary mitigation measures in the event of any environmental impact that affects the population around the plants.

Strategy 6
Discussion: Good practices for improve social acceptance:
Efficient management of digestate
Key takeaways:

- The second area requiring the greatest protection must be the digestate storage and treatment area.
- The digestate storage must have protection to prevent odours, the emission of ammonia with loss of the digestate's fertilising value, and methane, with loss of energy potential and reduction of the plant's capacity to mitigate greenhouse gas emissions.
- For all these reasons, the digestate storage and management area must receive special attention in the design of the project and in the subsequent operation of the plant.
- Ensure that the digestates generated in the plants will comply with the sanitary measures established in the current regulations. During operation, carry out periodic controls, analysing their content of pathogens and other contaminants.
- Apart from the effects of a good design of the digestate storage, its subsequent use must be contemplated in detail in the project of the facilities. The use depends, among other factors, on the balance of nutrients between those generated by the plant in the form of digestate and the needs of the crops in the area of influence of the plant. In case of equilibrium in this balance, the storage capacity of the plant must allow regulating the approximately continuous production of nutrients with the seasonal needs of the crops.

✓ Adopting sufficient storage capacity implies knowing, and even integrating into the operation of the plant, the fertilization practices of the area, and the corresponding action plans in the case of vulnerable areas, with what this implies in terms of design and operation of the corresponding logistics. This can be a benefit of the plant for the farmers in the area.

✓ Adopting sanitary control measures for the trucks dedicated to distributing digestate. Also, it must be ensured that the composition of the digestate meets sanitary guarantees and that it adapts to the needs of the crops.

In the event that the result of the nutrient balance indicates a surplus of nutrients, the appropriate technological strategy will be adopted for the treatment of the digestate, so that the products obtained can be valued and exported outside the area of influence of the plant.

Strategy 7
Discussion: Good practices for improve social acceptance:
Safety
Key takeaways:

- Strictly comply with all safety measures established in the regulations in force for this type of installation.

✓ Consider local regulations.

✓ Define and clarify the identification of risks and their controls.

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✓ In the case of national or regional regulations that are still not sufficiently clear for some aspects of these installations, due to their novelty, it is suggested to adopt more restrictive regulations in force in other countries with a higher degree of implementation of biogas and biomethane, as a preventive criterion.

Conclusion
The stakeholder's participation was very active and, indeed we had very fruitful discussions about the strategies and good practices for improve social acceptance.

6th Workshop: Social opportunities

Date and Time, Location	28 May 2025, hybrid
Participants	13

Method
1_Provision of information for initial discussion 2_Discussion + brainstorming (asking for their feedback, one-to-one) 3_Joint conclusions 4_And with the feedback of the stakeholders define the strategy of final conclusions

Workshop objectives
Key objectives • Presentation of GreenMeUp cases and consolidated documents with the Hubs (Society, Market, Policy). • Engage actors from all three hubs (Society, Market, Policy) and raise their interest to participate in future policy interventions and dissemination of key messages to decision-makers. Expected results • Consolidated documents of GreenMeUp with the Hubs (Society, Market, Policy). • Strengthen the impact of GreenMeUp results on the current policy/legislative agenda for biogas and biomethane in the country.

Key takeaways
Strategy 1 **Discussion:** Best practices for improved Social acceptance **Key takeaways:** The following areas for improvement have been identified in the implementation of these projects, specifically: • Improved dialogue, transparency, communication, and citizen participation; • Improved actions related to environmental commitments and environmental protection; • Improved actions related to transferring benefits to the community; • Improved actions for the ideal location of facilities; • Improved actions for managing waste, manure, and other substrate inputs to the plants; • Improved digestate management; • Improved safety and risk control actions. **Strategy 2** **Discussion:** Social operational license **Key takeaways:**

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1. Promote intersectoral communication and collaboration
    - Establish channels of dialogue with key stakeholders in the region, including local governments, productive sectors, and civil society.
2. Reach out to interest groups and opposition platforms.
    - Promote constructive debate based on respect, developing mechanisms for listening and understanding the concerns they may express.
3. Promote dialogue and transparency.
    - Create clear and accessible dissemination mechanisms regarding projects, their characteristics, and their impact on the region.
4. Promote a participatory strategy based on a prior analysis of the region.
    - Design participatory strategies that respond to the specific characteristics and needs of the environment where the project will be developed.
5. Incorporate citizen participation in the early stages of the project.
    - Actively involve the community from the initial stages, addressing their concerns and providing ongoing information on the project's progress.
6. Generate a sense of belonging in the community
    - Promote the integration of the project into local society, encouraging citizens to feel part of its development and success.
7. Establish an empathetic approach to local stakeholders
    - Create open spaces for dialogue where local stakeholders can express their concerns, prioritizing close and understandable communication beyond the technical aspects of the project. Illustrate with concrete examples how the potential impacts or problems identified will be addressed.
8. Inform about the benefits of biogas and biomethane plants
    - Inform not only about the environmental benefits of the plants, such as their contribution to solving waste or pollution problems, but also highlight other potential benefits associated with their operation.
9. Highlight specific benefits according to the characteristics of each territory
    - The non-environmental benefits associated with the plants are directly linked to the specific characteristics of each territory. Therefore, it is essential to inform the community about these benefits, based on a detailed analysis of each project's environment, in order to identify opportunities for positive impact in each specific case.
10. Evaluate the possibility of implementing community return measures
    - Study, and where appropriate, adopt measures to return the plant's activities to the community so that the community can benefit from the plant's products.

Strategy 3
Discussion: New tool: "SOOP - The Social Opportunities Assessment", Toolkit for Energy-related Projects
Key takeaways:

- Clean Energy Projects developers need to reduce the uncertainty trough a platform that helps guide their social and political interactions:
    - Listen to the main stakeholders
    - Asses the social acceptance
    - Manage the social risks through a two-ways process
- SOOPP! Should be a collaborative tool that can be developed and financed together with the different players in the sector:
    - Developers
    - Institutions
    - NGO's
    - Investors

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◦ Social Organizations • Platform basis: ◦ Project management: aimed at preparing social impact reports ◦ Toolbox: providing know-how and helpful resources • Business Model ◦ A product SaaS: scalable and adjustable to different scenarios ◦ Licensing model with different rates depending on the scope of functionalities ◦ Aggregated services

Conclusion
Social acceptance is a key bottleneck for the sector development in Spain. The stakeholders are engaged on that, and their participation was very active with very fruitful discussions for improving social acceptance.

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