



SYMSITES

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List of Abbreviations and Acronyms

Abbreviation	Definition
AnMBR	Anaerobic Membrane Bioreactor, an advanced wastewater treatment technology applied within the SYMSITES project
CHJ	Confederación Hidrográfica del Júcar, Spanish River Basin Authority under the Ministry for the Ecological Transition and the Demographic Challenge
EcoSite	Demonstration site where Industrial-Urban Symbiosis solutions are implemented and validated within the SYMSITES project.
EPSAR	Public Entity for Wastewater Treatment in the Valencian Community
I-US / IUS	I-US / IUS
ITRMP	IT Regional Management Platform supporting data integration and resource management within the SYMSITES framework
KLAR!	Austrian Climate Change Adaptation Model Regions programme (Klimawandel-Anpassungsmodellregionen).
MITECO	Spanish Ministry for the Ecological Transition and the Demographic Challenge.
OFMSW	Organic Fraction of Municipal Solid Waste



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1 Abstract

This deliverable presents the stakeholder engagement activities carried out in the four SYMSITES EcoSites (Spain, Denmark, Austria, and Greece), including workshops, stakeholder forums, and dissemination materials targeting local authorities.

The objective was to assess the role and perception of public authorities regarding the Industrial-Urban Symbiosis (I-US) concept. Results show a generally positive but conditional reception, highlighting strong interest in circular economy solutions, water reuse, and resource recovery.

At the same time, key non-technological barriers were identified across all EcoSites, including regulatory complexity, economic constraints, and coordination challenges. The deliverable concludes that the successful implementation of I-US depends on enabling regulatory frameworks, financial viability, and continued stakeholder engagement.

2 Executive Summary

This deliverable presents the stakeholder engagement and dissemination activities implemented within the SYMSITES project across the four EcoSites in Spain, Denmark, Austria, and Greece. These activities included stakeholder forums, workshops on non-technological barriers, local authority meetings, and the use of communication materials (brochures, presentations, and visual tools) to facilitate understanding of the Industrial-Urban Symbiosis (I-US) concept.

The primary objective was to involve local and regional public authorities in the validation, acceptance, and potential replication of I-US solutions, which aim to integrate wastewater treatment, organic waste management, and resource recovery within a circular economy framework. Across all EcoSites, authorities played a central role in aligning project activities with regulatory frameworks, supporting stakeholder coordination, and ensuring effective communication with local communities.

The results show a generally positive but cautious reaction to the I-US concept. Public authorities demonstrated strong interest in its potential to improve water reuse, enhance resource efficiency, and contribute to climate adaptation and sustainability objectives. Their engagement was particularly relevant in facilitating institutional coordination, supporting pilot implementation, and embedding the concept within regional planning processes.

However, the deliverable also highlights a consistent set of non-technological barriers that limit large-scale adoption. These include regulatory complexity and lack of clarity, administrative burdens related to permitting procedures, economic constraints and unclear financing mechanisms, as well as challenges linked to social acceptance, stakeholder coordination, and availability of technical skills. While the specific context varies across EcoSites, these challenges are common and underline the need for enabling conditions beyond technological readiness.

Key findings across the EcoSites include:

- Strong institutional interest in circular economy solutions and water reuse
- Critical role of public authorities in enabling implementation through regulation and planning
- Need for clearer and more flexible regulatory frameworks
- Importance of viable business models and financing schemes



- Relevance of awareness-raising and stakeholder engagement for social acceptance

The deliverable concludes that the successful deployment and replication of I-US solutions depend on the combined effect of supportive policy frameworks, economic viability, and continuous multi-stakeholder engagement. The activities carried out demonstrate that participatory approaches—such as workshops and stakeholder forums—are essential to identify barriers, build trust, and bridge the gap between innovation and real-world implementation.

Overall, D6.5 provides valuable insights into how local authorities perceive and support circular solutions, offering practical lessons to guide the future scaling and replication of Industrial-Urban Symbiosis systems in different European contexts.

3 Objectives

The objective of this deliverable is to document and evaluate the stakeholder engagement and dissemination activities carried out within the SYMSITES project across the four EcoSites (Spain, Denmark, Austria, and Greece).

In particular, this deliverable aims to:

- Analyse the involvement of local and regional public authorities in workshops, stakeholder forums, and related engagement activities.
- Assess the perception and reaction of these authorities towards the Industrial-Urban Symbiosis (I-US) concept and its application in circular resource management.
- Identify the main non-technological barriers—regulatory, economic, organisational, and social—that may hinder the large-scale implementation of I-US solutions.
- Evaluate the role of communication and dissemination materials in supporting awareness and understanding of the concept among stakeholders.
- Provide insights to support the future uptake, replication, and integration of I-US approaches within policy and territorial planning frameworks.

Overall, the deliverable seeks to contribute to bridging the gap between technological innovation and practical implementation by strengthening stakeholder engagement and identifying enabling conditions for the deployment of I-US systems.

4 Description of the work

4.1 Spanish Ecosite

4.1.1 Involvement of local authorities in Stakeholder Forums – Spanish EcoSite

In the Spanish EcoSite specifically, three stakeholder forums were organised, addressing themes such as wastewater treatment, resource recovery, and public awareness. These forums brought together local authorities, citizens, industry representatives, and academia, facilitating the exchange of perspectives on the implementation of symbiosis-based solutions. The involvement of local authorities in these forums was essential to ensure alignment between technological developments and regional planning strategies. From these interactions, it was observed that local authorities play



a key role in fostering acceptance of the I-US model at the territorial level, particularly by **supporting communication with citizens and facilitating institutional coordination**.

For instance, via the municipality of Muro de Alcoy an agreement was reached to install the containers to collect the organic waste at the public schools and nursing homes. At the same time, this coordination was the seed to organise the stakeholder forum at these schools and the event at the nursing home to raise awareness about organic waste separation and collection. Their feedback revealed that policy alignment, regulatory clarity and close communication channels are necessary conditions for scaling the model beyond pilot demonstrations. The reaction of local authorities can therefore be described as progressively positive as the targeted institutions successfully collaborated in the project.



Figure 1. Meeting organized with the municipality of Muro de Alcoy to explain the SYMSITES project and the needs to collect the OFMSW¹

4.1.2 Workshop on Non-Technological Barriers – Spanish EcoSite

A dedicated workshop entitled “Non-technological barriers: SYMSITES Project” was organized by FACSA and FOVASA on 26 November 2024 at the AITEX facilities and the Alcoy WWTP, within the framework of the Spanish EcoSite. The objective of this event was to identify and discuss the main non-technological barriers that could affect the large-scale implementation of the Industrial-Urban Symbiosis (I-US) concept, including regulatory, financial, organisational, and social aspects. The workshop combined technical presentations with an on-site visit to the pilot plant, enabling participants to directly observe the SYMSITES technologies and their integration into a real operational environment. The event gathered a wide spectrum of stakeholders, including representatives from local and regional public authorities, industrial partners, research institutions, and universities. Specifically, the invitation list included entities such as **EPSAR** (Public Entity for Wastewater Treatment in the Valencian Community) and **municipalities like Alcoy, Muro de Alcoy, and Cocentaina**, demonstrating the strong involvement of local authorities in the EcoSite activities.

During the discussions, several critical challenges were highlighted linked to the deployment of I-US, including regulatory constraints, lack of prioritization within public administrations, funding limitations

¹ <https://www.aguasresiduales.info/revista/noticias/el-ayuntamiento-de-muro-de-alcoy-colabora-con-el-p-oiUv>



for infrastructure upgrades, and the need for skilled personnel to operate and maintain new systems. Despite these barriers, the interaction during the workshop showed a clear interest in supporting innovative circular economy approaches, while emphasizing the need for alignment between policy, investment, and technical solutions. This indicates a constructive but cautious reaction to the I-US concept, where authorities recognize its potential but require enabling conditions for full implementation.



Figure 2. Discussion about non-technological barriers and visit to the pilot plant

4.1.3 Water reuse from the WWTP: applications and barriers

The presentation highlighted the I-US approach, demonstrating how urban wastewater, industrial effluents, and organic waste streams can be combined to generate reclaimed water and valuable by-products. The session was framed within a broader discussion on the need to increase wastewater reuse in response to water scarcity and stricter environmental regulations.

A key highlight of the event was the public debate on barriers to urban water reuse, where multiple stakeholders involved in water management participated, including the **Confederación Hidrográfica del Júcar (CHJ)**. This institution is part of the Spanish River Basin Authorities (Confederaciones Hidrográficas) and operates under the Ministry for the Ecological Transition and the Demographic Challenge (MITECO) at national level, being responsible for water planning, management, and regulation within its basin. The debate addressed several critical issues, including



the applicability of current legislation for water reuse, the allocation of costs associated with new technologies and infrastructure, and whether current water pricing schemes are sufficient to support advanced treatment processes. The participation of the CHJ provided a regulatory and institutional perspective, highlighting the complexity of translating legal frameworks into practical implementation and the need for coordination between administrations, industry, and technology providers. **The discussion also emphasized that economic aspects (such as cost distribution and water pricing) remain key barriers for large-scale adoption.** Overall, the conclusions drawn from this debate indicate that while there is strong institutional awareness and willingness to support water reuse strategies, further efforts are required to simplify regulatory procedures, define clear financing mechanisms, and ensure that water pricing reflects the real costs of advanced treatment, thereby enabling the effective deployment of I-US solutions such as those developed in SYMSITES.

4.1.4 Brochures and Printed Dissemination Materials

As part of the dissemination strategy, printed materials such as PowerPoint presentations, SYMSITES brochures, the minibook, the roll-up of the project, and trifold leaflets were used in the events described. These materials were employed to provide a concise and accessible overview of the project objectives, technologies, and expected impacts, and to properly explain the symbiosis at the regional level. Specifically, for public administrations, these brochures served as an introductory tool to understand the I-US concept and its potential benefits in terms of resource efficiency, circular economy, and regional development. The use of this simplified and visual communication formats facilitated the explanation of the SYMSITES concept, and no new material was needed for these explanations.



Figure 3. Example of the materials employed at the events describe to facilitate the comprehension of the SYMSITES concept to the stakeholders involved.

4.1.5 General conclusions of the Spanish EcoSite

- Strong institutional interest in innovative circular solutions: Municipality of Muro de Alcoy, EPSAR and CHJ (local, regional, and national authorities) demonstrated a growing interest in technologies aligned with circular economy principles. The discussions highlighted the



importance of ensuring consistency between technological developments and regional planning strategies. In this sense, public authorities play a key role in integrating such solutions into policy frameworks.

- Additionally, the Municipality of Muro de Alcoy provided specific support to the project implementation, notably by facilitating communication channels to install the containers for organic waste collection in schools and the nursing home.
- National entities such as CHJ showed a clear interest in promoting water reuse strategies, particularly in response to water scarcity and increasing regulatory requirements. At the same time, it was highlighted that water reuse must be compatible with maintaining sufficient flows in public water bodies, in order to avoid negative downstream impacts and ensure ecosystem protection.
- Authorities pointed out the challenges associated with translating existing legal frameworks into practice, underlining the need to streamline procedures, clarify responsibilities, and adapt regulations to emerging technologies. Also, the need for clear financing mechanisms and cost-recovery schemes (e.g., water pricing structures) was identified as essential.

4.2 Danish Ecosite

4.2.1 Involvement of local authorities in Stakeholder Forums – Danish EcoSite

In the Danish EcoSite, stakeholder forums were organised in 2024 and 2025 (a planned 2023 forum was cancelled due to low registration). These forums addressed key themes such as wastewater treatment, water reuse, nutrient recovery, and the implementation of circular resource management solutions within the SYMSITES framework. The events brought together local public authorities, research organisations, utilities, and project stakeholders, enabling knowledge exchange and discussion on the adoption of Industrial-Urban Symbiosis (I-US).

The involvement of local authorities—particularly the Bornholm Regional Municipality—was central to these activities. In the 2024 Stakeholder Forum held at Svaneke Wastewater Treatment Plant, municipal representatives from the wastewater and environmental permit departments actively participated in discussions on regulatory frameworks, planning considerations, and future opportunities for wastewater reuse. Their participation ensured alignment between project developments and local administrative and regulatory conditions.

The interactions highlighted that local authorities play a crucial role in facilitating the implementation of I-US solutions, particularly through permitting processes, environmental regulation, and infrastructure planning. Feedback from the forums emphasized the need for regulatory clarity, streamlined administrative procedures, and alignment with local environmental goals.

Overall, the reaction of local authorities can be described as constructively positive but cautious, with strong interest in the concept but clear recognition of the regulatory and practical challenges that must be addressed before large-scale implementation.





Figure 4. Stakeholder event 2024

4.2.2 Workshop on Non-Technological Barriers – Danish EcoSite

A dedicated workshop entitled “*Wastewater as a Resource*” was organised on 20 March 2025 at Svaneke Wastewater Treatment Plant and Møbelfabrikken in Nexø. The objective of this workshop was to identify and address non-technological barriers affecting the implementation of water reuse and the broader I-US concept, including regulatory, administrative, economic, and social aspects.

The workshop combined a technical site visit with a co-design session involving a diverse group of stakeholders, including farmers, representatives from the Bornholm Regional Municipality, agricultural organisations, and academia. This ensured direct dialogue between end-users, decision-makers, and technical experts.

During the discussions, several key barriers were identified:

- Regulatory and administrative constraints, particularly related to permitting processes
- Economic uncertainties and lack of incentives
- Infrastructure and logistical challenges related to water storage and distribution
- Limited flexibility in current legislation
- Social acceptance and awareness challenges

Participants showed a strong willingness—particularly from the agricultural sector—to engage with water reuse solutions. However, it was clearly expressed that administrative burden and regulatory limitations are currently major obstacles.

The workshop resulted in the development of a comprehensive Action Plan to overcome non-technological barriers, including measures such as bundling permit applications, developing pricing strategies for reclaimed water, integrating infrastructure planning, and exploring legislative adjustments.

The interaction during the workshop demonstrated a high level of interest and engagement with the I-US concept, while also highlighting that successful implementation depends on enabling regulatory frameworks, economic viability, and practical feasibility.



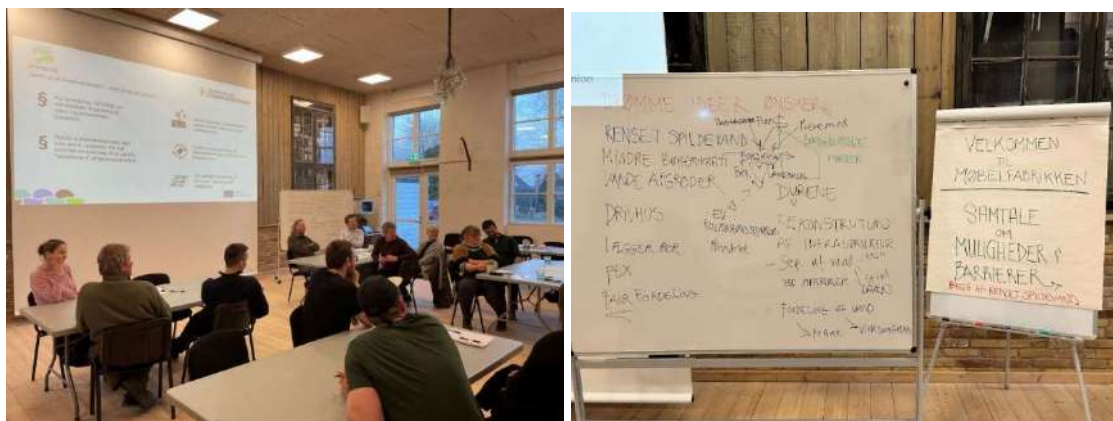


Figure 5. Photos from the workshop

4.2.3 Water reuse and circular resource management: applications and barriers

The stakeholder forums and workshop collectively addressed the application of the I-US concept at the Danish EcoSite, particularly focusing on the integration of municipal wastewater, organic waste, and agricultural needs to enable water reuse and nutrient recovery.

Discussions highlighted several critical barriers to implementation:

- Regulatory challenges: Uncertainty regarding the adoption and implementation of EU water reuse regulation (EU 741/2020) in Denmark. (Note: In January 2026 Denmark decided to opt-out prohibiting wastewater reuse)
- Economic barriers: Unclear investment responsibilities between utilities and farmers, and uncertainty regarding the business case for upscaling
- Logistical challenges: Seasonal variation in water demand, long transport distances, and storage requirements
- Technical uncertainties: Scalability of the system, food waste pre-treatment issues, and membrane performance
- Environmental concerns: Groundwater protection and safety of reclaimed water

At the same time, stakeholders identified significant opportunities, including:

- Nutrient recycling (nitrogen and phosphorus)
- Reduced pressure on freshwater resources
- Synergies between utilities, agriculture, and local industries

The discussions confirmed that while there are strong awareness and interest in water reuse and circular approaches, practical implementation remains complex and requires coordinated action across regulatory, economic, and technical domains. The reaction to the I-US concept can therefore be described as positive but conditional, depending on the resolution of these barriers.



4.2.4 Brochures and Printed Dissemination Materials

As part of the dissemination and stakeholder engagement activities, several supporting materials were developed and used during the Danish EcoSite events.

These included:

- Informational flyers distributed during the workshop, presenting:
 - Project overview
 - Mass balances of nitrogen, phosphorus, and water
 - Environmental impacts and resource potentials
- Visual materials supporting discussions during workshops and stakeholder forums
- Documentation of workshop outputs, including the Action Plan and co-design results

These materials were designed to provide a clear and accessible introduction to the SYMSITES project and the I-US concept, particularly for local stakeholders such as farmers and public authorities. The use of concise and visual communication formats helped facilitate understanding of complex technical concepts and supported productive discussions.

Overall, these materials contributed to improving stakeholder awareness and fostering informed dialogue on circular resource management and water reuse at the local level.



Figure 6. Brochure developed for the workshop

4.2.5 General conclusions of the Danish EcoSite

The activities at the Danish EcoSite show a generally positive reception of the I US concept among local stakeholders. Local authorities, particularly the Bornholm Regional Municipality, have been actively engaged and play a key role in enabling implementation through regulation and planning.

At the same time, stakeholders emphasised that wider implementation depends on overcoming key barriers, including regulatory uncertainty, administrative complexity, economic feasibility, and logistical challenges.

Overall, the reaction can be described as positive but conditional, with strong interest in the concept, provided that enabling frameworks and practical conditions for implementation are established.



4.3 Austrian Ecosite

4.3.1 Stakeholder Forum (in St. Valentin, 21.06.2023)

Focus: Introduction to SYMSITES; wastewater irrigation as an adaptation option; linking climate, industry, and agriculture.

Participants: KLAR! Managers (<https://www.klimawandelanpassung.at/>), mayors, Federal Environment Agency; about 100 people.

Highlights: Technical feasibility and quality monitoring; socio-economic benefits; need for public outreach and training; holistic water resource management.

Role of local authorities: Mayors and KLAR! managers contributed municipal perspectives, examined use in regional adaptation strategies, and provided feedback on implementation pathways; the Federal Environment Agency provided guidance on national direction and regulation.



Figure 7. Presentation and moderation of Mr. Plank (Spiter)

4.3.2 Stakeholder Forum (in Sieghartskirchen, Berger Schinken, 18.11.2024)

Focus: Water reuse in food businesses; strict regulation; monitoring; Berger Schinken as a practical example.

Participants: ecoplus Food Cluster of Lower Austria (a provincial initiative), companies, academia, public representatives; about 30 people.

Highlights: Regulation seen as the main barrier; need for pilot plants, funding, research projects, advisory services, and political pressure for adjustments; broad agreement on the importance of monitoring.

Role of local authorities: Representatives of the province and other public bodies discussed permitting and hygiene issues, signaled openness to pilot projects and support with funding pathways; authorities served as an interface between businesses, law, and enforcement practice.





Figure 8. Bernd Maderner presenting the pilot plant at the Stakeholder forum in Sighartskirchen

4.3.3 Stakeholder forum: ONE WATER (IFA Tulln, 15.05.2025, <https://www.one-water.at/>)

Focus: “One Water” approach across drinking water, wastewater, stormwater, and resource utilization; climate risks, regulation, digitalization, circular economy.

Participants: about 150 from research, industry, water management administration, and the municipal level; organized by IFA-Tulln (BOKU) with ecoplus.

Highlights: Best practices on reuse, monitoring, and energy/resource recovery; regulation as a hurdle, with consensus on strict quality controls; survey showed broad support for wastewater reuse (with safety measures) and for EU regulation with national flexibility; workshop on non-technical barriers.

Role of local authorities: Municipal actors and specialist administration contributed input on regulatory design, financing, and practical implementation; helped align research/industry approaches with permitting practice, public communication, and municipal use cases.



Figure 9. One Water/Symsites stakeholder forum at BOKU University



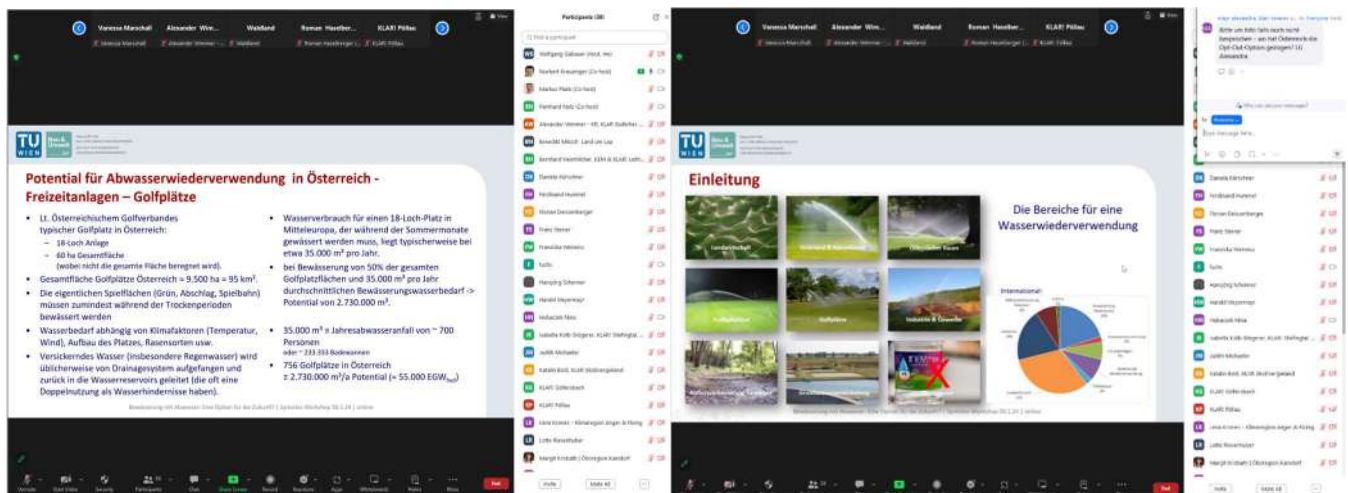
4.3.4 Online workshop KLAR! Regions: “Irrigation using wastewater: an option for the future?” (online, 30.01.2024)

Focus: the Austrian Symsites project partners organized together with the “KLAR! Managers” this online workshop on the topic of irrigation with wastewater. This is a completely new topic in Austria – the Austrian government has chosen the opt out from EU regulation 2020/741 on minimum requirements for water reuse. Focus was to involve all stakeholders on this topic to finally reach that Austria will implement the EU regulation 2020/741.

Participants: KLAR! regions managers (majors from cities and villages), experts/scientist from several Austrian Universities and experts from national authorities

Highlights: Draft an expert letter and include KLAR! participants Letter to the provincial governors, scientific background prepared by experts, distribute using the KLAR! infrastructure, Mr. Markus Plank (KLAR! manager) is available to act as contact person between science/technology and regional and national authorities.

Role of local authorities: approx. 1/3 of the participation KLAR! managers are majors of villages/regional cities; they are responsible for implementing climate change adaption measures in their regions/villages and to raise the issue with the relevant authorities.



From the identified non-technological barriers together with the stakeholders 6 most important actions/activities were defined to be implemented within the next years:

1. New research projects (responsible BOKU, Universities)
2. New “technical data sheet” on wastewater reuse (responsible: association “ÖWAV”)
3. Improvement of legal framework for new biogas projects (responsible: Austrian Biogas Association)
4. Awareness raising events on quality of biogas digestate/fertilizer for farmers (responsible: Berger Schinken)
5. Awareness raising events presenting Austrian “EcoSite” (responsible BOKU)
6. Scale up of Austrian EcoSite at Berger Schinken and identification of other regions in Austria for implementation (responsible Berger Schinken and BOKU)

The 6 actions will be implemented together with the Austrian Symsites partners and in cooperation with following associations:

- Austrian Biogas Association (<https://www.kompost-biogas.info/>)
- Association „food cluster Lower Austria” (<https://www.ecoplus.at/vernetzen/lebensmittel-cluster-niederoesterreich>)
- Association “KLAR” (<https://klar-anpassungsregionen.at/>)
- Austrian Water Association ÖWAV (<https://www.oewav.at/#>)

Most important is that the I-US concept established within the Symsites project will be maintained sustainably by the partners/association mentioned above. One important goal is already reached: Austrian Government is now discussing to implement the EU regulation 2020/741 on minimum requirements for water reuse.

4.4 Greek Ecosite

4.4.1 Involvement of local authorities – Municipality of West Achaia

The Municipality of West Achaia was directly involved in the Greek EcoSite as the local authority responsible for supporting communication with the territory and facilitating the engagement of public and institutional stakeholders. In this role, the municipality helped connect the SYMSITES technical work with local governance needs, municipal planning priorities and practical implementation conditions in the area.

The local authority focused on explaining the I-US concept, discussing the possible valorization of local organic and wastewater streams, and identifying non-technological barriers that may affect the long-term deployment of symbiosis-based solutions. These exchanges were important because the Greek EcoSite requires coordination between municipal services, regional authorities, industry actors, technology providers and the local community in order to move from pilot-scale activity to wider adoption.

4.4.2 Workshop on Non-technological Barriers- West Achaia, 11 September 2024

A dedicated workshop on non-technological barriers was held in West Achaia, Greece, on 11 September 2024, within the framework of the Greek EcoSite study visit and workshop. The session



was designed to identify and prioritize the non-technological barriers affecting the implementation of I-US in the region and to foster collaboration among stakeholders for addressing them. The workshop brought together local government officials, industry representatives, academic experts, NGOs focused on sustainability, and community leaders and members.

The barriers were identified through surveys and interviews with local stakeholders, including community members, industry representatives and government officials, as well as through focus group discussions and review of relevant experiences. Local Government Authorities provided insights on governance and regulatory challenges, while industry representatives highlighted financial and market-related barriers. The discussion therefore connected public authority perspectives with the practical needs of businesses and technical partners involved in the EcoSite.

The workshop confirmed that several barriers need to be addressed at different governance levels. At local level, the main needs relate to community engagement, awareness campaigns, local governance improvements, skills development and better communication channels among stakeholders. At regional level, financing mechanisms, market access and collaboration frameworks are required, while at national level policy harmonization and regulatory clarity are necessary to support wider deployment of I-US solutions.



Figure 11. Group photo and plenary discussion from the Greek EcoSite non-technological barriers workshop held in West Achaia on 11 September 2024.

The content discussed during the workshop included organization and governance, finance, policy and regulation, skills and capabilities, social acceptance, commercial and market conditions, and information flows. Specific challenges included fragmented coordination among local authorities, insufficient stakeholder engagement in decision-making, limited access to funding, high compliance costs, delays in policy implementation, shortage of skilled workforce, public resistance due to lack of understanding, limited market access for innovative solutions, and lack of data sharing platforms for best practices.

From the perspective of local authorities, the reaction to the I-US concept can be described as constructive and forward-looking. Participants recognized the potential of the Greek EcoSite to demonstrate how olive wastewater, municipal wastewater and organic waste can be co-treated to produce useful outputs such as biogas, biohydrogen, compost and reclaimed water for irrigation. At the same time, the workshop made clear that acceptance and scale-up depend on governance coordination, reliable data, practical financing routes and continued communication among public authorities, industry and technical partners.





Figure 12. Site visit and workshop materials used during the Greek EcoSite non-technological barriers workshop in West Achaia.

4.4.3 Local authority information event at the Municipal Unit of Dymi (1st December 2024)

On 1st December 2024, the Municipality of West Achaia organized a local authority information event at the Municipal Unit of Dymi. The objective was to keep the municipal unit and local stakeholders informed about SYMSITES, the circular economy approach and the Horizon Europe project activities related to new anaerobic treatment processes for industrial and household waste.

The event included interactive sessions, open dialogue, Q&A moments, practical explanations and networking opportunities. The discussions helped participants understand the potential of biowaste and wastewater streams as resources and linked the project to the everyday responsibilities of local authorities in waste management, environmental protection and sustainable development. The reaction was positive, with interest in the environmental benefits of resource recovery and the need for continuous coordination with municipal structures.



Figure 13. Local authority information event and SYMSITES dissemination materials at the Municipal Unit of Dymi on 1 December 2024.

4.4.4 Local authority information event at the Municipal Unit of Olenia (7th December 2024)

On 7th of December 2024, the Municipality of West Achaia organized an additional local authority information event at the Municipal Unit of Olenia. This activity extended the engagement process to another municipal unit and continued the dialogue with representatives and stakeholders on SYMSITES, circular economy and the use of new anaerobic treatment processes for industrial and household waste.

As in Dymi, the event combined interactive discussion, expert input, practical explanation and networking. It supported the dissemination of the I-US concept at local authority level and helped clarify how municipal actors can contribute to the implementation of circular economy solutions. The reaction of the local authority stakeholders was constructive, with emphasis on the importance of practical information, institutional coordination and continuous communication between the municipality, regional actors and project partners.



Figure 14. Stakeholder group photo from the local authority information event at the Municipal Unit of Olenia on 7 December 2024.

4.4.5 Brochures, presentations and printed dissemination materials for local authorities

Printed and visual dissemination materials were used throughout the local authority actions to explain the objectives, technologies and expected impacts of SYMSITES in an accessible way. These included presentations, SYMSITES brochures, project roll-ups, posters and printed information material. The materials were particularly useful for public administration representatives because they translated the technical I-US concept into practical messages related to resource efficiency, circular economy, local development and environmental management.

The materials also supported the discussion of non-technological barriers by providing a shared visual basis for dialogue among municipal representatives, regional actors, industry and project



partners. They helped local authorities understand both the opportunities and the implementation requirements of the I-US model, including the need for better coordination, data collection, awareness raising and collaboration with stakeholders.

5 Conclusions

The activities conducted within the four SYMSITES EcoSites confirm that stakeholder engagement is essential to support the implementation and replication of Industrial-Urban Symbiosis (I-US) solutions. Workshops, stakeholder forums, and dissemination actions have enabled effective dialogue between public authorities, industry, research organisations, and local communities, contributing to a better understanding of the I-US concept and its potential applications.

Across all EcoSites, local and regional public authorities demonstrated a generally positive yet conditional attitude towards I-US. Their interest is driven by the potential benefits related to water reuse, resource efficiency, circular economy, and climate adaptation. However, their support is strongly dependent on the existence of appropriate enabling conditions.

A common set of non-technological barriers has been identified in all participating countries. These include regulatory and administrative complexity, lack of clear and harmonised frameworks, economic and financial uncertainties, and challenges related to coordination, skills, and social acceptance. These findings highlight that technological maturity alone is not sufficient to ensure large-scale deployment.

The deliverable also underlines the key enabling role of public authorities, particularly in facilitating regulatory alignment, supporting planning and investment decisions, promoting stakeholder coordination, and integrating I-US approaches into policy and territorial development strategies.

Overall, the results demonstrate that the successful implementation and scaling-up of I-US systems require a comprehensive approach combining:

- Supportive and adaptable regulatory frameworks
- Clear and viable financing mechanisms
- Strong institutional coordination
- Continuous stakeholder engagement and awareness-raising

The experience gained within the SYMSITES project provides valuable insights and practical lessons for the wider adoption of Industrial-Urban Symbiosis solutions in different European contexts, contributing to the transition towards more sustainable and circular resource management systems.

