SUPREMAS

Syngas modular Units Providing Renewable Energy from Multiple wAstes and for different useS

D1.2 Stakeholder Mapping

April 2025

Steinbeis Europa Zentrum (SEZ)

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Please note that this deliverable stands in close connection to the deliverable 7.5 'Multi-stakeholder and community involvement plan' in the SUPREMAS project (GA No 101160713) which was also authored by STEINBEIS. Thus, some sections may overlap with deliverable D7.5.

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List of Abbreviations

Abbreviation	Description
T	Task
WP	Work Package
D	Deliverable
DSS	Decision Support System
n.a.	Not available
NGO	Non-Governmental Organisation

EXECUTIVE SUMMARY

This report represents the deliverable (D) 1.2 ‘Stakeholder Mapping’ of the SUPREMAS project. D1.2 showcases the approach used to identify and map relevant project stakeholders according to their interest and influence in the project. The report presents the results of the stakeholder mapping activities, which were conducted in a joint effort with the entire SUPREMAS consortium. This report serves as a foundation for the project’s communication plan and its stakeholder involvement activities.

This report shall provide the reader with the following:

- Information on the chosen stakeholder mapping approach in the project.
- Information on relevant project stakeholders in demo site countries and potential replication countries.
- Insights on the benefits of involving relevant stakeholders in the project.
- Insights on the benefits for stakeholders to be involved in the project.
- Information on the chosen stakeholder involvement approaches.

1 INTRODUCTION

The SUPREMAS project is embedded in the European Commission's strategic orientation to make Europe the first digitally-enabled circular, climate-neutral, and sustainable economy through the transformation of its mobility, energy, construction, and production systems. As part of these objectives, SUPREMAS follows the ambitious plan to boost the sustainability of renewable energy and renewable fuel value chains, taking fully into account circular economy, social, economic, and environmental aspects in line with the European Green Deal priorities. Particularly, through combined efforts for effective market uptake of renewable energies and fuel technologies, the project supports the commercialisation of innovative technologies.

In order to boost the commercialisation of the renewable energy technologies developed in SUPREMAS, and to ensure an effective replication of the project's approach, it is required to identify relevant stakeholders early on along the entire bio-based energy production value chain. Through the systematic identification and anticipated involvement of stakeholders with interest and influence in the project's activities, a larger network can be created, and the impact of the SUPREMAS solutions can be effectively extended.

1.1 Purpose and scope of the deliverable

The purpose of this deliverable is to systematically report the identification and prioritisation of stakeholders showing interest and potential influence in the SUPREMAS project, its program, and in business opportunities. This deliverable describes the approach used to identify, prioritise, and map relevant project stakeholders, and showcases the actual implementation of all planned activities within T1.2 'Stakeholder Mapping'. The final stakeholder map serves as a foundation for the project's communications and stakeholder involvement plan.

1.2 Contributions of partners

This deliverable is embedded in WP1 'Syngas decentralised production – setting the framework'. Therefore, SEZ, as the WP1 leader and the main author of this report, was in close alignment with all project partners to collect a relevant pool of stakeholders located in project partner countries and other suitable locations for replication of project technologies. During the planned activities of T1.2 'Stakeholder Mapping', every project partner actively participated in workshops and in the input collection processes to map relevant stakeholders.

1.3 Relation to other activities in the project

The activities performed in T1.2 'Stakeholder Mapping' are closely related to the activities in T7.2 'Communication and dissemination activities' and T7.3 'Multi stakeholder and Community Engagement'. The final stakeholder map, described in this report, assists in the targeted communication and dissemination of project activities to prioritised stakeholders. In addition, the final stakeholder map served as the starting point for deciding which stakeholders to invite to co-creation workshops at the project demo sites in Portugal and in Spain, organised in T1.4 'Demonstrator and DSS co-creation conceptual design'.

2 STAKEHOLDER MAPPING APPROACH

This chapter describes the theoretical approach used to map stakeholders for SUPREMAS. The first subchapter (2.1) lays out the approach on how to identify relevant stakeholders, whereas the second subchapter (2.2) describes the theoretical approach on how relevant stakeholders were analysed, grouped, and prioritised.

2.1 Stakeholder identification

To identify relevant stakeholders, it is required to consider all people, or groups, that are affected by, or who can influence, or may have an interest in the performed activities of SUPREMAS. At this initial stage, it is essential to be inclusive, to identify all stakeholders, and consider not only their possible contributions to the project but also their hidden motivations to become involved (Durham , 2014).

Within the T1.1 'Market Analysis', SEZ developed a value chain for bio-syngas, which can be seen in Annex 1. Based on this value chain, stakeholder categories were considered in T1.2, starting from stakeholders engaged in the feedstock supply and ending with stakeholders who represent end-users and who have certain interests and influences in the project. Moreover, stakeholders from the additional influential areas 'Rules and Norms' as well as 'Supporting function in the value chain' were considered. This initial stakeholder analysis resulted in a preselection of stakeholder categories, which can be seen in Table 4.

Table 4: Categories for the stakeholder identification process

Categories for the stakeholder identification process
• Technology and Equipment Providers • Logistics and Supply Chain Management • Feedstock suppliers • Plant Operators and Service Providers • Financial and Investment • Research, Innovation, and Standards • Regulators and Policy Makers • Legal and Advisory Services (e.g. consulting) • Community and Advocacy Groups (e.g. NGO's) • End-Users and Consumers • Media and Information (e.g. journalists) • Other

In order to effectively collect stakeholders, SEZ prepared an Excel document and circulated it amongst consortium partners to gather their respective stakeholders (see Annex 2). This internal collection approach enabled the gathering of stakeholders not only from the project partners' countries (Italy, Sweden, Spain, France, Germany, Belgium, Portugal) but also from diverse sectors such as waste management, academia and research, associations, and finance. During the stakeholder identification phase, SEZ complied with the latest EU General Data Protection Regulations, outlined in D8.2 'Ethics requirement' and D8.3 'Data Management Plan'.

The diversity of the project partners contributed to the collection of a pool of stakeholders, which were grouped along predefined stakeholder categories (Table 4). In order to support the stakeholder collection process, consortium partners were assisted with guiding questions (see Table 5), which helped them find relevant stakeholders at project demo site levels, as well as gather stakeholders on a project replication level.

Table 5: Guiding questions for identifying stakeholders

Guiding questions for identifying stakeholders (adopted from Durham, 2014)
• Who is responsible for making decisions that might affect the project? • Are there policies emerging or in existence that will benefit from or be affected by the project? If so, who needs to be informed? • Which individuals are likely to be affected by the outputs of the project? Who, although not directly affected, may be interested in the results of the project? • Are there stakeholders who have been involved in similar projects on previous occasions? • Which groups or individuals may be able to provide relevant information, equipment, or resources? • Who is likely to have a negative view of the project? • Which stakeholder(s) is/are essential to involve? Who is it preferable to involve? Who needs to be consulted? Who needs to be informed? • Which parties are likely to be the most influential? • Who will be critical to the final delivery? • Are there Renewable Energy Communities (RECs) or related actors that could be interested in this research? If there are, can they be involved?

2.2 Stakeholder analysis – stakeholder types and their prioritisation

The stakeholder identification process described above generated a list of stakeholder persons and stakeholder organisations. The list indicated, for each identified stakeholder, the benefits to the project of involving that stakeholder (project perspective) and the benefits to the stakeholder of being involved in the project (stakeholder perspective). The next step was to evaluate and analyse the stakeholders in order to prioritise them in terms of the need for involvement.

An interest/influence matrix was used to further categorise stakeholders (see Figure 1). The matrix serves as a useful tool to plot stakeholders, whether they have a high or low interest, and high or low influence on the project activities. The categories in which stakeholders are mapped determine the level of their involvement. The lowest level of involvement is to ***communicate*** with stakeholders, which means to keep them in the loop in the form of general updates within the communication activities of the project. The middle level of involvement represents to ***advocate/ consult*** stakeholders. Their high ability to influence the project signifies that they possess importance, however, their low level of interest suggests that these stakeholders should first be advocated for the project and then consulted.

The next involvement level is to ***communicate/ consult*** stakeholders, since these stakeholders may not have much influence, but their high interest implies that they care about the project and its outcomes. Therefore, this group needs to be kept informed and considered due to their potentially valuable insights. The highest level of involvement is represented by the stakeholders grouped in the section ***collaborate/ co-create***. These stakeholders need to be fully involved in the project as they can significantly influence the project's success. In this case, regular communication and collaboration with them are essential.

More detailed explanations on the specific stakeholder involvement activities are found in D7.5 'Multi-stakeholder and community involvement plan'.

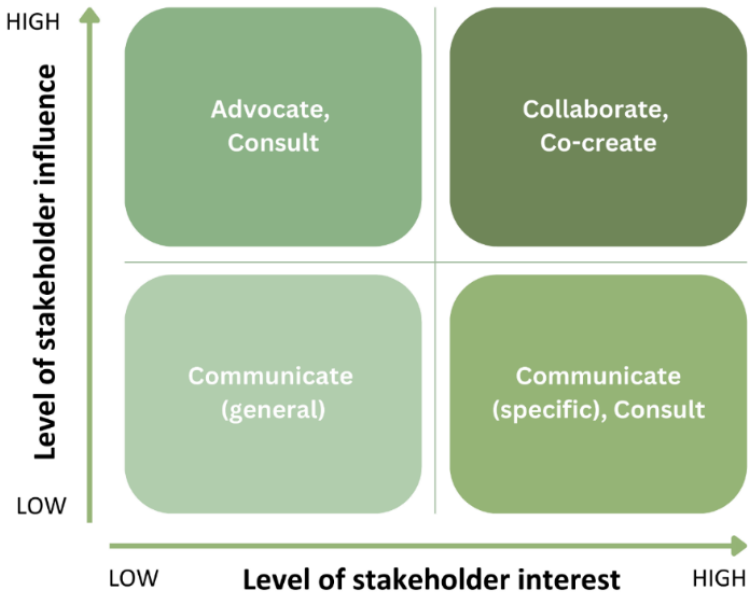


Figure 1: Interest/ Influence matrix

Once the consortium partners identified and documented relevant stakeholders in an Excel list, SEZ organised an interactive online workshop in month 8 (M8) (December 2024) together with the entire consortium, to collect further relevant stakeholders and to determine the levels of interest and influence of the stakeholders. In the online workshop, the identified stakeholders, resulting from the Excel list, were mapped in a matrix according to their interest and influence in SUPREMAS.

3 STAKEHOLDER MAPPING RESULTS

This chapter describes the concrete results of the stakeholder identification and prioritisation activities mentioned above. The results of the conducted online workshop will be further elaborated in this chapter.

3.1 Stakeholder Radar

During the online workshop in M8 (December 2024), a stakeholder radar was created together with consortium partners. Annex 3 showcases the final result. The stakeholder radar represents a total of 12 stakeholder types. Each stakeholder type is separated into two sections – demo site stakeholders and replication stakeholders. The purpose of this separation is to collect and map both stakeholders who are relevant for the demo sites in Portugal and in Spain, and those who are relevant for the replication of the solution developed in SUPREMAS in other countries across Europe. The following tables list the identified stakeholder categories on the demo and replication sites in alphabetical order. Each stakeholder in the list is marked with a country code based on the main location of the stakeholder's head offices to ease the identification process. Among the stakeholders in the list, stakeholders from geographical areas outside the SUPREMAS Consortium (Czech Republic, Austria and The Netherlands) have been included as they can be considered as potential candidates for the future replication of the concept.

Table 6: Regulators and Policy Makers

Demo Sites	Replication Sites
• APA – Agencia Portuguesa de Ambiente (PT) • City of Porto (PT) • DGEG - Direção Geral de Energia e Geologia (PT)	• Eskilstuna Municipality (SE) • European Environmental Bureau (EURO) • Junta de Extremadura (ES) • KEA Klimaschutz und Energieagentur (GER) • Landkreis Böblingen Klimaschutz Agentur (GER) • Ministerium für Umwelt, Klima und Energiewirtschaft Baden Württemberg (GER) • Regierungspräsidium Stuttgart -Abteilung Umwelt (GER) • Sedigas (ES) • Task Force Erneuerbare Energien (GER) • Västerås City (SE)

Table 7: Financial and Investment

Demo Sites	Replication Sites
• Abamca agro (ES) • Bankinter (ES) • Cajamar (ES)	• BW Invest (GER) • GLS Bank (GER) • KfW (GER) • LBBW Bank (GER) • Tomorrow Bank (GER) • Triodos Bank (GER) • Wirtschaftsförderung GmbH für Stadt und Landkreis Lüneburg (GER) • Wirtschaftsförderung Region Stuttgart Zukunftsenergien (GER)

Table 8: Logistics and Supply Chain Management

Demo Sites	Replication Sites
• n.a.	• Dachser SE (GER) • ENAGAS (ES) • Grand Port Maritine de Dunkerke (FR) • Haropa Port (FR) • Redexis (ES) • Rhenus Logistics (GER)

Table 9: Feedstock suppliers

Demo Sites	Replication Sites
• ALMA CARRAO VEJAS (ES) • Maderas barcia (ES) • Martín Códax (ES) • Martinez Procesado de Madera (ES) • Servicios Forestrales Logística Maderera Marcos Rodríguez (ES) • Torres (ES)	• Bonduelle (FR) • COVAP (ES) • Danone (FR) • DCOOP (ES) • Ekilstuna Energi och Miljö (SE) • Exver Bioenergy (ES) • FINSA (ES) • Foresa (ES) • Greenyard (FR) • Holzwerke Ladenburger GmbH (GER) • Lactalis (FR) • Malärenergi (SE) • Nestlé (FR) • Pfeifer Group (GER) • Prince Bretagne (FR) • Remondis Recycling GmbH (GER) • Saveol (FR) • Torres Forestral (ES) • Vafab Miljö (SE) • Waldservice Ortenau eG (GER)

Table 10: Media and Information (e.g. journalists)

Demo Sites	Replication Sites
• Porto Canal (PT)	• ANSA (IT) • APRE – Agenzia per la Promozione della Ricerca Europea (IT) • EEBIO News (ES) • EERA Bioenergy Joint Programme (BE) • Energie & Management Verlagsgesellschaft mbH (GER) • EUBCE EU Biomass Conference and Exhibition (IT)

Table 11: Other stakeholder

Demo Sites	Replication Sites
• n.a.	• BEC - Bioeconomy Cluster (GER) • Cluster Spring (IT)

Table 12: End-Users and Consumers

Demo Sites	Replication Sites
• ACERINOX (ES) • ALMA CARRAOVEJAS (ES) • ARCELORMITTAL ESPAÑA (ES) • BIOGA - Clúster Tecnolóxico Empresarial das Ciencias da Vida de Galicia (ES) • Capwatt (PT) • CASA CARBALLO SAT (ES) • Cluster da Madeira e o Deseño de Galicia (ES) • Cooperativa Arousana (ES) • COVAP (NATURLEITE) (ES) • Delagro (ES) • Ecocelta (ES) • ESTAL (ES) • Foresa (ES) • GRAMONA (ES) • Greenvolt (PT) • Grupo Aresa (ES) • GRUPO LACTALIS (LECHE DE GALICIA) (ES) • GRUPO LECHE RIO (ES) • Grupo Soaga-Fabrisa (ES) • INTASA (ES) • Lourizan - centro de Investigación Forestal (ES) • MARTÍN CÓDAX (ES) • Órgánica de Sustratos (ES) • PAGO DE LOS CAPELLANES (ES) • PAZO DO MAR (ES) • PAZO LA CUESTA (ES) • SAT OS PENEDOS (ES) • TABLEROS HISPANOS (ES) • TEN - TRATAMIENTOS ECOLÓGICOS DEL NOROESTE (ES) • Timac Agro (ES) • TORRES (ES) • TRADEBE (BIOCOMPOST DE GALICIA) (ES) • VIDRALA (ES) • VIRATEC - Clúster Galego de Solucións Ambientais e Economía Circular (ES) • XERA - Axencia Galega da Industria Forestal (ES)	• n.a.

Table 13: Community and Advocacy Groups (e.g. NGO's)

Demo Sites	Replication Sites
• Agência de Energia do Porto (PT) • APDA- Associação Portuguese de Distribuição e Drenagem de Águas (PT) • APEMETA - Associação Portuguesa de Empresas de Tecnologias Ambientais (PT)	• AAMF (FR) • ATEE (FR) • AVEBIOM (ES) • Bioeast Hub (CZ) • Biogaz Vallée (FR)

• APESB - Associação Portuguesa de Engenharia Sanitária e Ambiental (PT)	• BUND (GER) • Club Biogaz (FR) • Club Cogénération (FR) • Club Power-to-Gas (FR) • Comunità Energetica Rinnovabile Antrodoco (IT) • Comunità Energetica Rinnovabile del comune di Guardabosone (IT) • EBA (BE) • Fachagentur Nachwachsende Rohstoffe e. V. (FNR) (GER) • Gaz Renouvelable (FR) • Heidelberger Energie Genossenschaft (GER) • Métha Synergie (FR) • MéthaFrance (FR) • Municipality of Isola del Gran Sasso (IT) • Syndicat des énergies renouvelables (FR) • Transition Initiative (GER)

Table 14: Technology and Equipment Providers

Demo Sites	Replication Sites
• n.a.	• B2S Renewable Energies (ES) • Gasnam Neutral Transport (ES) • Hitachi Energy (SE, International) • Institute for Technical Chemistry (ITC) (GER) • Prezero (International) • Suez (FR, International) • Tecnicas Reunidas (ES) • Veolia (PT, International)

Table 15: Research, Innovation and Standards

Demo Sites	Replication Sites
• FEUP - Faculdade de Engenharia da Universidade do Porto (PT) • INEGI - Instituto de Ciência e Inovação em Engenharia Mecânica e Engenharia Industrial (PT) • LNEC - Laboratório Nacional de Engenharia Civil - Núcleo de Engenharia Sanitária (PT) • LNEG - Laboratório Nacional de Energia e Geología (PT) • Nanogap (ES) • Universidade do Minho (PT) • Universidade Nova de Lisboa - Faculdade de Ciências e Tecnología (PT)	• AINIA ES) • AITIIP (ES) • Biomass Technology Group (BTG) (NL) • Centre on Sustainable Consumption and Production (CSCP) (GER) • Cluster of Bioeconomy and Environment of Western Macedonia (CLUBE) (GRC) • CSIC (ES) • Eifer - European Institute for Energy Research by EDF and KIT (GER) • FITA Fundación de Innovación y Transferencia Agroalimentaria de Aragón (ES) • Fraunhofer - Department of Synthetic, CO2-neutral fuels (GER) • Fraunhofer - Department Pyrolysis and combustion technologies (GER) • Güssing Energy Technologies (A)

	• I3A (ES) • IVL (SE) • RISE (SE) • Swedish Energy Agency (SE) • TU Wien - Department of Thermal Process Engineering and Simulation (A) • University Hohenheim (GER)

Table 16: Plant Operators and Service Providers

Demo Sites	Replication Sites
• Acciona (PT) • ADRA - Águas da Região de Aveiro (PT) • AGERE (PT) • AGF Ingeniería de procesos (ES) • AGS (PT) • Águas de Portugal - AdP Valor (PT) • Águas do Norte (PT) • Águas do Tejo Atlântico (PT) • Águas do Vale do Tejo (PT) • AQUALIA (ES) • Aquapor (PT) • Bewater / Águas de Valongo (PT) • Biogas Canarias ES) • Bolschare (ES) • Grupo ENCE (ES) • Heygaz Biomethane S.L (ES) • Indaqua (PT) • Ingelia (ES) • Mota-Engil – Ativ (PT) • Naturgy (ES) • Reganosa (ES) • Residuos Archipiélago S.L (ES) • Simdouro (PT) • SMAS Maia (PT) • Veolia Portugal (PT)	• Bio Base Europe Pilot Plant (BE) • Genera group (IT) • Greenpeace Energy (GER) • Linde (GER) • SOCIETA' AGRICOLA AGRIMAN S.R.L. (IT) • Società Agricola Coste (IT) • Società Agricola Doiola (IT) • Società Agricola San Vittore (IT) • VA Cluster Mälardalen (SE) • Valorizzazione Ambientale Società Agricola (IT)

Table 17: Legal and Advisory Services (e.g. consulting)

Demo Sites	Replication Sites
• Aqualogus Engenharia e Ambiente (PT) • COBA Consultores de Engenharia (PT) • Funseam (PT) • TPF Consultores (PT)	• LEA - Energieagentur Kreis Ludwigsburg (GER) • Ritterhaus (GER)

The next chapter 3.2, outlines the results of the interest/ influence mapping online workshops and provides a summary of the outcomes.

3.2 Interest/ Influence Matrix

Table 18: Interest/ Influence matrix summary

Influence

Identified stakeholder categories: 1. **Feedstock Suppliers** – 5 times 2. **Other stakeholders** – 4 times 3. **Regulatory and Policy Makers/ Technology and Equipment Providers** – 3 times **Advocate, Consult**	Identified stakeholder categories: 1. **Plant Operators and Service Providers** – 16 times 2. **End-Users and Consumers** – 11 times 3. **Regulatory and Policy Makers** – 6 times **Collaborate, Co-Create**
Identified stakeholder categories: 1. **Logistics and Supply Chain Management** – 6 times 2. **Feedstock Suppliers** – 6 times 3. **Community and Advocacy Groups (e.g., NGOs)** – 6 times **Communicate (general)**	Identified stakeholder categories: 1. **Research, Innovation and Standards** – 20 times 2. **Plant Operators and Service Providers** – 16 times 3. **Community and Advocacy Groups (e.g., NGOs)** – 14 times **Communicate (specific), consult**

Interest

Table 18 showcases a summary of the interest/ influence matrix, which was created together with all SUPREMAS consortium partners during the online workshop in December 2024. The complete interest /influence matrix can be found in Annex 4. Table 18 lists the top three stakeholder types most frequently mentioned by project partners in each involvement category. The table indicates as well that some stakeholder types can belong to several involvement categories, since these stakeholders were ranked differently by some project partners. The next section provides more insights into each involvement category (paragraphs 3.2.1 to 3.2.4). Each paragraph showcases the identified benefits of both involving stakeholders (project's perspective) in the project and for stakeholders to get involved in SUPREMAS (stakeholders' perspective). These benefits were collected by consortium partners and documented in an Excel spreadsheet.

3.2.1 Low interest/ low influence stakeholders

In this stakeholder involvement category, three types of stakeholders were most commonly identified, which are *1) Logistics and supply chain management, 2) Feedstock suppliers*, and *3) Community and advocacy groups (e.g. NGO's)*. These stakeholders will be involved in the project mainly by keeping them up to date in the form of communication activities (e.g. newsletters or social media).

Project's perspective - why do they have to be involved in SUPREMAS?

Logistics and supply chain management

- Understand the fit of biogas in transport infrastructure.
- Some stakeholders are big players in waste logistics and supply chain management and services.
- Often have organic waste to valorise.

Feedstock suppliers

- Supplier of wood and forest biomass.
- Have organic waste to valorise.
- They manage municipal waste and can provide biogas.

Community and advocacy groups (e.g. NGO's)

- Knowledge transfer promoter in the water and wastewater sector.
- Potential user of renewable energy.

Stakeholders' perspective – what is their benefit by being involved in SUPREMAS?

Logistics and supply chain management

- Trade-offs between movable units and transport.
- Access to technology progress for biogas valorisation.
- Potential end-users and interested in local energy production.

Feedstock suppliers

- Obtain mobile solutions for managing fluctuating organic waste in various environments.
- Can manage their municipal solid waste.

Community and advocacy groups (e.g. NGO's)

- Stay up-to-date and collaborate in developments in the wastewater by-products valorisation field.
- New use cases and applications for Power-to-Gas technology.
- Demonstration of mobile cogeneration units.

3.2.2 Low interest/ high influence stakeholders

This stakeholder involvement category consists of the following most commonly identified stakeholder types: *1) Feedstock suppliers, 2) Other stakeholders*, *3) Regulatory and Policy Makers/ Technology and Equipment.* The main involvement method of this stakeholder type in the project will be to advocate and consult them specifically on project results developed during the project lifetime.

Project's perspective - why do they have to be involved in SUPREMAS?

Feedstock suppliers

- Have organic waste to valorise.

Other stakeholders (e.g. clusters)

- Can serve as multiplier in the project.

Regulatory and Policy Makers/ Technology and Equipment

- Potential interest in guiding the project to achieve environmental, social, and policy-aligned outcomes.
- Manage industrial and organic waste.

Stakeholder's perspective – what is their benefit by being involved in SUPREMAS?

Feedstock suppliers

- Can obtain mobile solutions for managing fluctuating organic waste in various environments.

Other stakeholders (e.g. clusters)

- Obtain information for member organisation on how to use, valorise and manage waste streams.

Regulatory and Policy Makers/ Technology and Equipment

- Advance environmental mission, influence policy, gain valuable data, and strengthen reputation and network.
- Obtain mobile solutions for managing fluctuating waste in various environments.

3.2.3 High interest/ low influence stakeholders

This stakeholder involvement category consists of the following most commonly identified stakeholder types: *1) Research, Innovation and Standards, 2) Plant Operators and Service Providers, 3) Community and Advocacy Groups (e.g., NGOs)*. The main involvement method of this stakeholder type in the project will be to communicate specific project results to them and obtain their feedback.

Project's perspective - why do they have to be involved in SUPREMAS?

Research, Innovation, and Standards

- Direct connection to research in renewable energy.
- Provide technical expertise and innovative approaches in energy efficiency and digitalization, crucial for SUPREMAS' goals.
- Offers technical expertise in sustainable production and material innovation, aligning with SUPREMAS' objectives. They are also part of several associations and platforms at the regional, national, and European levels.
- Offer expertise in sustainable resource management and circular approaches that complement SUPREMAS' objectives.
- Research into sustainable biomass applications and syngas technologies.
- Promote a sustainable energy system by supporting energy efficiency, renewable energy development, innovation, and climate change mitigation in Sweden.

- Experts in Thermal Process Engineering and Simulation.
- Experts in pyrolysis and combustion technologies.
- Experts in synthetic fuels production.
- Knowledge transfer promoter in the wastewater sector.
- Academic perspective and collaboration in the analysis of sludge and biochar, potential further research in the gasification field.
- New form of material, metal molecules (M-M), which, as catalysts, will be integral in the development of new advanced technologies and products.

Plant Operators and Service Providers

- Potential end-user for the syngas units developed in the project.
- Interested in local bio-syngas production and utilisation of own waste.
- Interested in local energy production and utilisation of own waste.

Community and Advocacy Groups (e.g., NGOs)

- Have large NGO networks that could promote the project.
- Interested in local energy production and utilisation of own waste.
- Can provide a platform for discussing bio-syngas applications.
- Promote local and renewable energy production through biomass, possible end-users, and consumers.
- Key platform for disseminating information and connecting stakeholders in the biogas and methanisation sectors.
- Expertise in methanisation project design and optimization for diverse stakeholders, including agriculture.

Stakeholder's perspective – what is their benefit by being involved in SUPREMAS?

Research, Innovation, and Standards

- Develop techniques for the recovery of energy from wastes.
- Know-how on the project research on syngas and biochar for further research.
- Get in contact with potential players to create new synergies.
- New research topics.
- Knowledge about current EU energy research and projects.
- Supporting the transition to sustainable energy systems in (e.g. in Sweden).
- Acquisition of know-how on syngas production.
- Stay up-to-date and collaborate in developments in the syngas field.
- Know-how on the latest research in biochar production.

Plant Operators and Service Providers

- Know-how and insights on the latest research in bio-syngas production.
- Utilizing sewage sludge for the production of renewable energy along with a marketable byproduct (e.g. biochar).
- Possibility for local renewable energy production.
- Valorisation of animal by-products not aimed for human consumption, and local renewable production.
- Relatively cheap possibility for local renewable energy production.

Community and Advocacy Groups (e.g., NGOs)

- Could obtain a solution to valorise waste streams that cause environmental issues.
- Relatively cheap possibility for local renewable energy production.
- Be up to date with the latest developments in biogases and be able to influence policymakers.
- Potential end-users and interested in local energy production.
- Have a need to investigate new possibilities to use local abundant resources like biomass.

3.2.4 High interest/ high influence stakeholders

In this stakeholder involvement category, three types of stakeholders were most commonly identified, which are *1) Plant Operators and Service Providers, 2) End-Users and Consumers,* and *3) Regulators and Policy Makers*. These stakeholders are essential for the success of the project and need to be closely monitored. The main involvement approach of this stakeholder type is to collaborate with them and involve them in co-creation workshops.

Project's perspective - why do they have to be involved in SUPREMAS?

Plant Operators and Service Providers

- Producer of biogas and available to host the technology.
- Potential end-user for the syngas units developed in the project.

End-Users and Consumers

- Know-how in industrial requirements and heavy equipment.
- Potential end-user for biochar in the project.
- Potential user of renewable energy.

Regulators and Policy Makers

- Grant permits for biomass gasification plants for syngas production.
- To disseminate the project‘s results.
- Some of these stakeholders are located in regions with large biogas potential.

Stakeholder’s perspective – what is their benefit by being involved in SUPREMAS?

Plant Operators and Service Providers

- Acquisition of knowledge on the treatment of the products of their plant.
- Utilizing sewage sludge for the production of renewable energy along with a marketable byproduct – biochar.
- Know-how on the latest research in bio-syngas production.

End-Users and Consumers

- Potential end-user and interested in local energy production. Potential end-user for biochar in the project.

Regulators and Policy Makers

- Might be interested in using their waste and producing local energy.
- Access to technology progress for biogas valorisation.
- Access to planning and decision support results.

4 CONCLUSION

A relevant stakeholder pool has been collected, and the stakeholder's interest and influence in the project has been identified. Through joint efforts with the entire project consortium, a diverse set of stakeholders from multiple European countries was gathered, and selected high-interest/high-influence stakeholders participated in the initial co-creation workshop at the project's demo sites in Portugal and Spain (D1.4). These stakeholders, as well as other identified stakeholders, will be systematically involved in the upcoming project activities. The stakeholder mapping activities outlined in this report showcase diverse stakeholder types along the bio-based energy production value chain, starting from feedstock providers and ending at renewable energy end-users. The identified stakeholders are going to be involved according to their interest and influence in the project through a diverse set of involvement activities, which are outlined in D7.5.

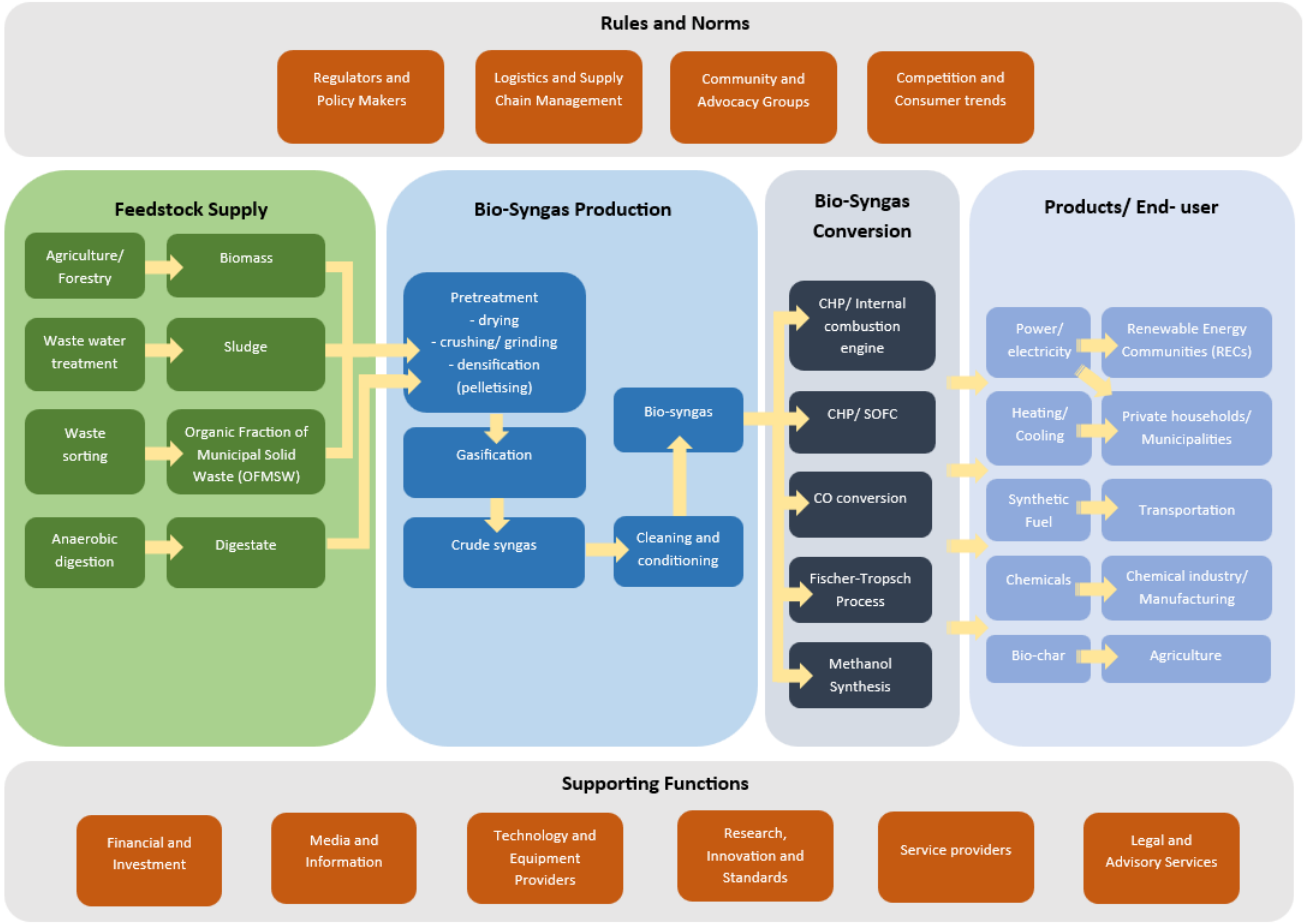
The involvement of stakeholders along the entire bio-syngas value chain will be essential not only to ensure the acceptance of bio-syngas technologies amongst stakeholders and local communities but also to enable a successful replication of the SUPREMAS technologies in multiple European and international locations. Through the involvement of diverse stakeholders and the replication of the SUPREMAS solutions, a real boost of renewable energy and renewable fuel value chains can be achieved, while the European Union's position as a forerunner in the bio-based energy production sector will be strengthened as well.

5 REFERENCES

Durham , E. (2014). *The BiodivERsA Stakeholder Engagement Handbook.* Paris: BiodivERsA.

6 ANNEXES

Annex 1: Extended value chain for bio-syngas



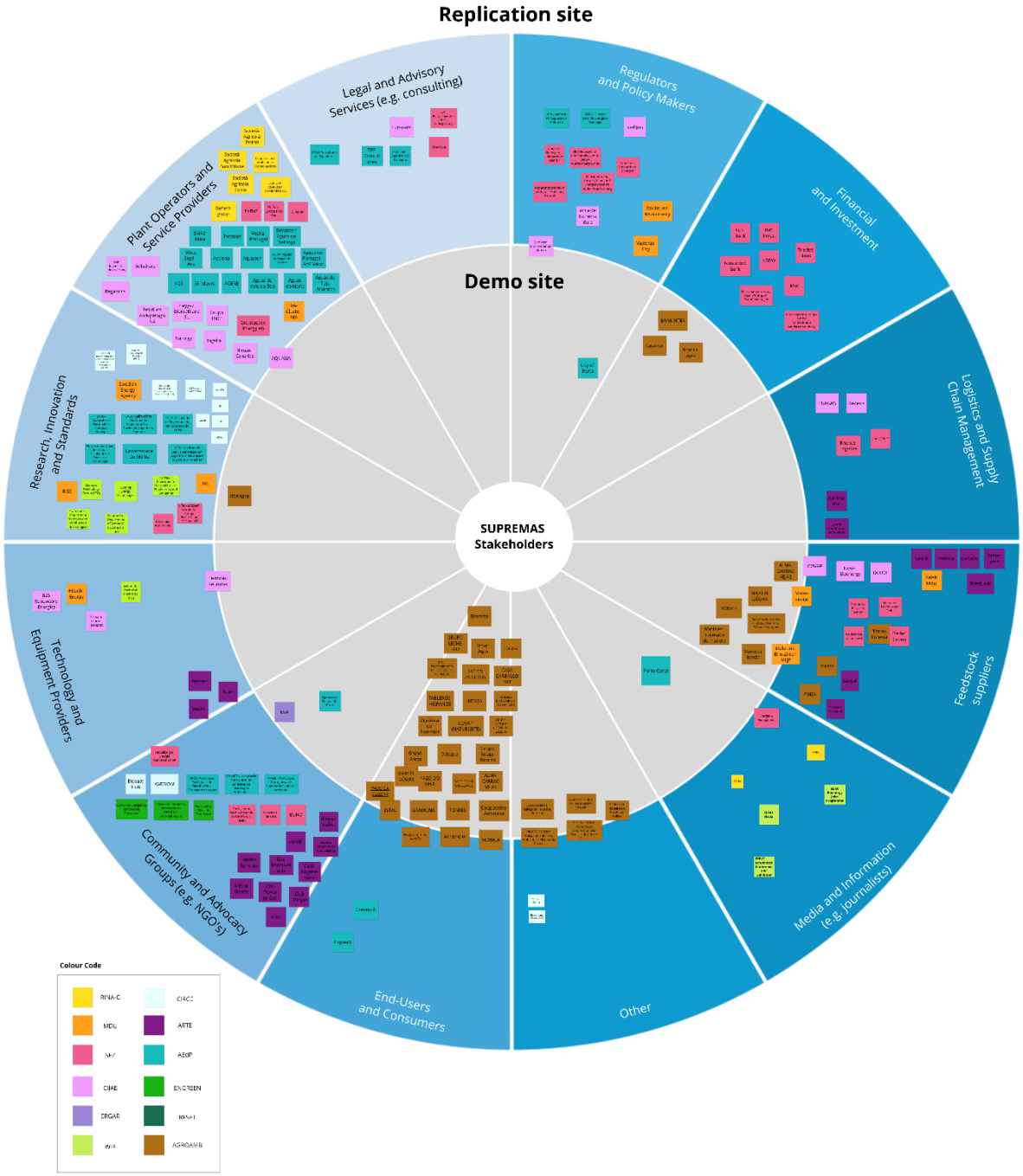
Annex 2: Screenshot of Excel-list used for the identification of stakeholders

SUPREMAS Stakeholder Identification

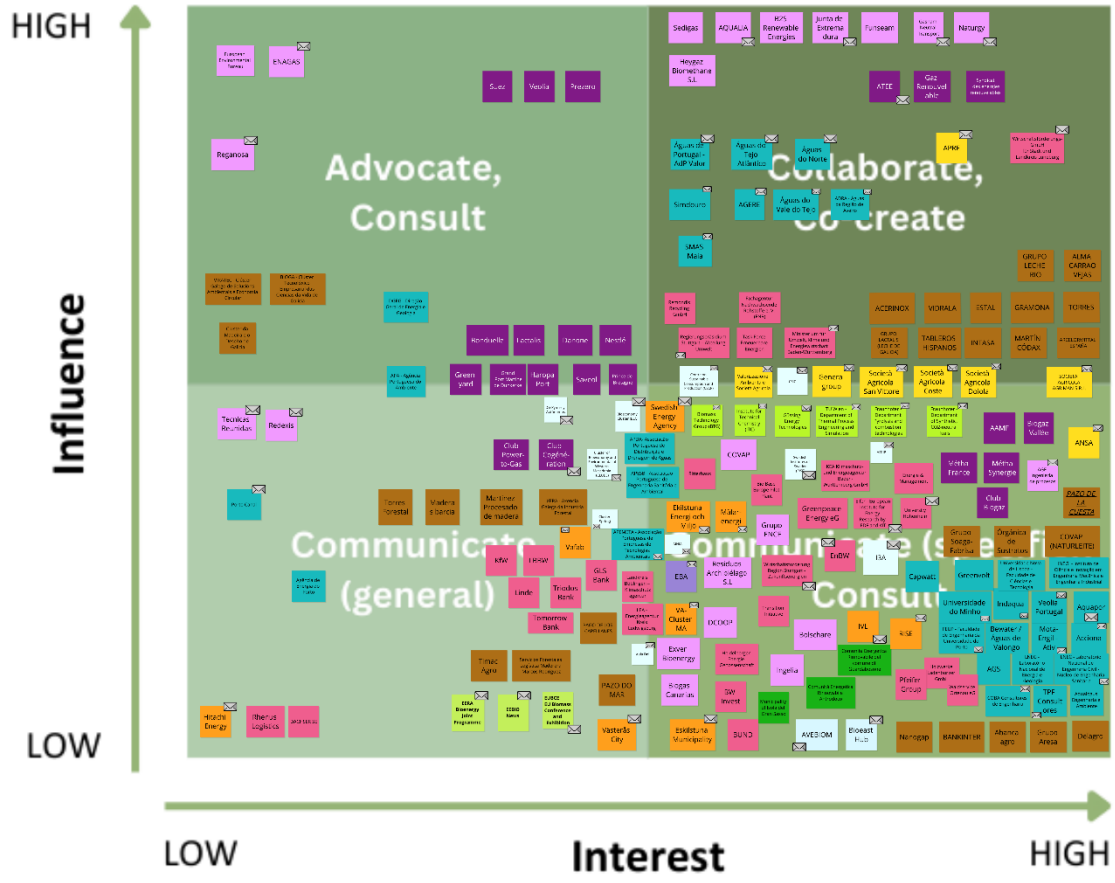
Stakeholder information						Reason of involvement		Stakeholder matrix		Stakeholder details		Your details		
Name of organisation	Economic sector	Stakeholder	Location city and/or country, if	Demosite / Replication site	Geographic scope	Project's perspective - why do we need them?	Stakeholder's perspective - what is their benefit?	Level of interest	Level of influence	Website link	Contact information (of stakeholder, if applicable)	Your name	Your organisation	Comment
	[SELECT FROM LIST]	[SELECT FROM LIST]		[SELECT FROM LIST]	[SELECT FROM LIST]			[SELECT FROM LIST]	[SELECT FROM LIST]				[SELECT FROM LIST]	

- Technology and Equipment Providers
- Logistics and Supply Chain Management
- Feedstock suppliers
- Plant Operators and Service Providers
- Financial and Investment
- Research, Innovation and Standards
- Regulators and Policy Makers
- Legal and Advisory Services (eg. consulting)
- Community and Advocacy Groups (eg. NGO's)
- End-Users and Consumers
- Media and Information (eg. journalists)
- Other

Annex 3: Stakeholder Radar



Annex 4: Interest/ Influence Matrix



Colour Code

RINA-C	CIRCE
MDU	ARTE
SEZ	AEdP
CIIAE	ENGREEN
ERGAR	RESET
WIP	AGROAMB

Stakeholder types & involvement approaches

Stakeholder Type	*Stakeholder Involvement Approach*
Low Interest - Low Influence	→ Communicate (general)
Low Interest - High Influence	→ Advocate, Consult
High Interest - Low Influence	→ Communicate (specific), Consult
High Interest - High Influence	→ Collaborate, Co-Create

Symbols

✉ Signifies stakeholders with whom partners are/ were already in contact (outside the SUPREMAS project)