CONCEPT OF WORKING GROUPS: GUIDANCE AND SCOPES

WORKING DOCUMENT

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RESPONSIBLE PARTNER: CEN AND CENELEC

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LIST OF CONTENTS

1.1 OBJECTIVE

To facilitate structured discussions on **industrial symbiosis standardization**, ensuring effective engagement, clear outcomes, and actionable recommendations for the **RISERS roadmap**, feeding into technical **standardization work**.

1.2 MEETING STRUCTURE & TIMELINE

1. *Meeting 1 (April/May 2025): Problem Definition & Standardization Needs*
2. *Meeting 2 (May 2025): Refinement & Initial Recommendations*
3. *Meeting 3 (September/October 2025): Validation & Finalization*

GENERAL GUIDELINES

- **Duration: 2-3 hours** per session.
- **Participants:** About 10 per Working Group.
- **Format: Online** (ad-hoc meetings can be created for further discussions).

EXPECTED OUTPUTS

1. **Interim Report (5 June 2025)** – Identifies **challenges, gaps, and early recommendations**.
2. **Final Report (12 November 2025)** – Consolidates **validated findings and standardization priorities**.

1.3 FACILITATION GUIDELINES FOR WG LEADERS

- **Encourage balanced participation**: Ensure all voices are heard, especially SMEs, researchers, and policymakers. Attention to gender-balance should be made.
- **Use evidence-based discussions**: Guide participants towards data-driven insights rather than opinions.
- **Avoid topic drift**: Keep the focus on standardization, not broader industrial symbiosis debates.
- **Keep time discipline**: Limit interventions and use structured speaking rounds.
- **Summarize & synthesize**: After each discussion block, clarify the key takeaways.
- **Encourage written input**: If discussions are too fast paced, allow participants to submit written feedback after the meeting.

1.4 MEETING MODERATION & AGENDAS

All WGs are moderated by a RISERS partner who should oversee the agenda, participation, utilization of tools, and take minutes accordingly.

Working Groups	Standardization Partner	Moderation Partner	WG Leader
WG 01 Industrial Symbiosis in General	DIN	ISL	James Woodcock (ISL)
WG 02 End-of-Waste	CEN	ISL	Faye Page (ISL)
WG 03 Digitalization & Data	CEN	ISL	Robert Howard (ISL)
WG 04 Steel, Slag & Refractories	DIN	EIT-RM	
WG 05 Batteries	CEN	EIT-RM	
WG 06 Packaging	DIN	Enspire	
WG 07 Waste Heat	CEN	Ugent	
WG 08 Textiles	DIN	FhG	
WG 09 Energy Data & Grids	CEN	Ugent	
WG 10 Biomass & Waste Wood	DIN	ISQ	

MEETING 1 – PROBLEM DEFINITION & STANDARDIZATION NEEDS

Timing: April–May 2025

OBJECTIVES:

1. List potential **synergy areas** and identify **barriers and gaps** in industrial symbiosis standardization.
2. Map out **existing challenges, practices, and regulatory issues**.
3. Establish **priority areas** for further exploration.

AGENDA (2,5H MAXIMUM)

1. OPENING & CONTEXT (30 MIN)

- **Welcome** – WG Leader
- **Overview of RISERS & Standardization Goals** – RISERS partner
    - Agreement on WG Leader
    - Registration of participants
    - IP and data processing declaration (see form)
- **Participant Introductions**

2. CHALLENGES & BARRIERS (50 MIN)

- **Participant Input:** Status of industrial symbiosis standardization in the field (10 min)
- **Facilitated Discussion:** (40 min with, e.g., Miro board)

    - What **synergy areas** are participants aware of in the field? (e.g., 5 min post-its, 5 min discussion)
    - What **practical barriers** do stakeholders face? What **technical, regulatory, and market challenges** exist? (e.g., 5 min post-its, 5 min discussion)
    - What **standards currently apply**, and where are gaps?

Facilitation Tip:

- Use **structured prompting** (e.g., "From an industry perspective, what are the top three challenges?").
- Encourage **fact-based input** rather than general opinions.
- Use **RISERS input** (WP3) to spark discussions.
- Take a 10-minute break afterwards.

3. PRIORITIZATION OF STANDARDIZATION NEEDS (30 MIN)

- Which synergies areas **require standardization efforts first**?
- How could **new or revised standards** address identified gaps?
- Prioritization exercise: Identify **top 3–5 critical areas**.

Facilitation Tip:

- Ensure **all voices are heard**, particularly SMEs and policy experts if present.

4. WRAP-UP & NEXT STEPS (10 MIN)

- **Summary of key takeaways**
- Assign **follow-ups** for further research.
- Confirm date for **Meeting 2** (before plenary on June 5).

MEETING 2 – REFINEMENT & INITIAL RECOMMENDATIONS

Timing: May 2025

OBJECTIVES:

1. Validate **challenges and needs** identified in Meeting 1.
2. Develop **initial recommendations** for standardization & regulation.
3. Prepare content for the **Interim Report (June 2025)**.

AGENDA (2,5H MAXIMUM)

1. RECAP & UPDATES (15 MIN)

- **Review of Meeting 1 outcomes** – WG Leader
- **Feedback from Coordination Committee**
  - Registration of participants
  - IP and data processing declaration (see form)

Facilitation Tip:

- Present **a synthesized list** of previous findings to guide discussions.
- Ask **specific validation questions** (e.g., "Does this list accurately reflect the key barriers?").
- Match Meeting 1 outcomes with RISERS findings to spark discussions.

2. REFINING STANDARDIZATION NEEDS (45 MIN)

- How could existing **standards be adapted or** new ones **created**?
- Where are **policy and regulatory gaps** that need addressing?
- What **international best practices** can be leveraged?

Facilitation Tip:

- Break discussion into **short, focused rounds** (e.g., 15 min each for policy, technical, and market gaps).
- Have **one person summarize key points** at the end of each round.
- Use brainstorming tools, e.g., Miro board.

3. DRAFTING INITIAL RECOMMENDATIONS (45 MIN)

- Develop **early standardization recommendations**.
- Assign **tasks for drafting Interim Report contributions**.

Facilitation Tip:

- Keep recommendations **specific and actionable** (avoid vague statements like "harmonization is needed").
- Encourage **evidence-based suggestions**, refer to existing deliverables if possible.

4. WRAP-UP & NEXT STEPS (15 MIN)

- Confirm **next steps for Interim Report** to be presented at the plenary on 5 June 2025.
- Plan for **Meeting 3 (Finalization)**.

MEETING 3 – VALIDATION & FINALIZATION

Timing: September–October 2025

OBJECTIVES:

1. Validate **recommendations for standardization**.
2. Ensure alignment with the **RISERS roadmap** via input by the Coordination Committee.
3. Finalize **contributions for the November 2025 plenary**.

AGENDA (3H MAXIMUM)

1. RECAP & UPDATES (15 MIN)

- **Overview of Interim Report findings**
- **Feedback from Coordination Committee**

2. VALIDATION OF RECOMMENDATIONS (90 MIN)

- Will the **proposed standardization recommendations work in practice**?
- Are there **missing elements** that should be addressed?
- Do recommendations align with **policy & industry needs**?

Facilitation Tip:

- Focus on **what needs adjustment** rather than re-discussing settled points.
- Use a **structured review format** (e.g., one facilitator presents one recommendation, then participants discuss).
- Ensure **minority perspectives are considered** (e.g., SMEs vs. large industry players).
- Ensure that all recommendations include a **what** needs to be done, **why** does it need to be done, and **who** needs to act.

3. FINALIZATION OF ROADMAP CONTRIBUTIONS (30 MIN)

- Ensure alignment with **policymakers, industry needs, and regulatory frameworks**.
- Finalize **key messages for the plenary session (November 2025)**.

Facilitation Tip:

- Use **checklist** by the Coordination Committee (to be prepared) to confirm completeness (e.g., “Does this recommendation address a real barrier?”).

4. WRAP-UP & NEXT STEPS (15 MIN)

- Confirm **final WG contributions** to roadmap document.
- Assign **final adjustments before plenary submission**.
- Outline next steps for **post-2025 roadmap implementation**.

1.5 WORKING GROUP OVERVIEWS

Working Group	Focus
WG 01 Industrial Symbiosis in General	Cross-sector synergies and IS systems
WG 02 End-of-Waste	Regulatory status and standards on waste reuse
WG 03 Digitalization & Data	Data sharing, monitoring & digital twins for IS
WG 04 Steel, Slag & Refractories	Industrial symbiosis in steel production & by-products
WG 05 Batteries	Recycling, reuse, and symbiotic opportunities
WG 06 Packaging	Circular packaging and material reuse in IS
WG 07 Waste Heat	Utilization of excess heat across industries
WG 08 Textiles	Textile recycling and IS applications
WG 09 Energy Data & Grids	Data exchange and energy grid symbiosis
WG 10 Biomass & Waste Wood	Organic waste valorization in IS

WG 01 IS IN GENERAL

OVERVIEW

This horizontal Working Group addresses system-level enablers of industrial symbiosis, going beyond individual sectors or materials. Industrial symbiosis is not only a way to reduce costs and environmental impact, but also a key mechanism of the circular economy, enabling more sustainable and innovative production systems. It reflects the principles of resource efficiency, waste minimization, and energy savings, while fostering cross-sector working.

The aim is to convert by-products, waste, energy, water, and other underutilised resources into valuable inputs for other sectors, creating mutual benefits and lowering the overall environmental footprint. This WG may explore standardised definitions, governance models, and how industrial symbiosis can be embedded in cross-sector strategies and standards.

SCOPE & FOCUS

Industrial symbiosis (including inter-company, cross-sectoral and industrial-urban symbiosis systems), and how standards could be applied to governance models, business frameworks, and enabling conditions.

IDEAS TO EXPLORE

- Development and standardisation of industrial symbiosis definitions and frameworks, considering CE standards and the existing CWA on IS
- Business models and governance frameworks for industrial symbiosis implementation – potentially building on existing work produced through other projects such as H4C ECOP
- Certification schemes and systemic enablers
- Introduction of a resource efficiency audit as part of an environmental audit or environmental management system
    - With environmental audits, companies and other organizations can review legal and other obligations for environmental protection, systematically identify the potential for environmental relief and for reducing resource consumption and raise employees' awareness of resource efficiency. Future resource efficiency audits could be implemented as part of an environmental audit or a voluntary environmental management system in companies. Specific information offers for companies, e.g. checklists differentiated by sector, further training and consulting offers could provide further support. The VDI publication series on production-integrated environmental protection (VDI 4075) and the efficient use of resources in companies (VDI 4801, VDI 4803) can serve as a basis. The VDI Center for Resource Efficiency is continuing its successful work in this area.

WG 02 END-OF-WASTE

OVERVIEW

This Working Group addresses one of the most fundamental enablers of industrial symbiosis: the transition from waste to resource. The End-of-Waste (EoW) status determines whether secondary materials can legally re-enter the economy. Without clarity and harmonisation, resource flows between sectors remain limited, including across borders.

EoW criteria currently vary across EU Member States, leading to regulatory fragmentation and uncertainty for industries seeking to reuse residual resources (wastes). This WG will explore how an industrial symbiosis standard can utilise existing input/product standards to unlock circular flows and enable industrial symbiosis at scale.

SCOPE & FOCUS

Regulatory status and connection with standards related to waste, focusing on definitions, quality requirements, and harmonized End-of-Waste (EoW) criteria.

IDEAS TO EXPLORE

- Standardized methods for assessing End-of-Waste status
- Alignment of criteria for reused materials to process input standards and other requirements (RHOS, POPs etc)
- Role of standards in supporting cross-border recognition of EoW decisions
- Synergies with existing and upcoming EU waste legislation

WG 03 DIGITALIZATION AND DATA

OVERVIEW

This horizontal Working Group focuses on how data and digital infrastructure can enable, monitor, and optimize industrial symbiosis (IS) across all sectors. As industrial symbiosis becomes more complex and interconnected, digital tools are essential for transparency, coordination, and efficiency. This includes identifying symbiotic opportunities, enabling secondary materials markets (either through facilitation or direct company interaction), and verifying environmental and economic outcomes.

Key challenges remain in the standardization of data formats, interoperability of platforms, and governance of data sharing: What data is available (public and private)? How could the myriads of digital tools interact? How should existing resource classification systems be used? What are examples of important aspects to be considered?

SCOPE & FOCUS

Data sharing, monitoring, and digital twins for industrial symbiosis — including governance, interoperability, and trust frameworks.

IDEAS TO EXPLORE

- Standards for data structures and exchange protocols supporting IS platforms
- Technical frameworks for data-sharing between platforms
- Potentially, the role of digital twins in modelling and monitoring symbiotic flows
- Ensuring interoperability with enterprise systems and alignment with other EU data initiatives, including reporting requirements

WG 04 STEEL, SLAG AND REFRACTORIES

OVERVIEW

This Working Group addresses industrial symbiosis opportunities related to steel production and high-temperature processes, e.g., focusing on by-products like slag, fly ash, and spent refractories. Secondary materials have significant potential for reuse in sectors such as construction, cement, and ceramics, enabling substantial environmental and economic benefits.

Key challenges might include regulatory uncertainties, material quality variability, and a lack of common standards for characterization, classification, and reuse. This WG will explore how standardization can facilitate safe and scalable valorization of steel-related residues, while aligning with circular economy and decarbonization goals.

SCOPE & FOCUS

Industrial symbiosis in steel production and by-products, focusing on slag reuse, refractory recycling, and material substitution across sectors.

IDEAS TO EXPLORE

- Standardized classification and testing for slags and refractory materials
- Environmental thresholds for reuse in construction and cement applications
- Design-for-reuse concepts for industrial refractories
- Guidelines for handling and processing of secondary raw materials in high-temperature industries
- Interlinkages with cement, ceramics, and infrastructure standards

ASSOCIATED SYNERGIES (FROM RISERS FACTSHEETS)

BOF/EAF SLAG REUSE IN CEMENT PRODUCTION

This synergy involves using steel industry by-products—basic oxygen furnace (BOF) and electric arc furnace (EAF) slags—as raw materials in cement production. Rich in calcium, silicon, and iron, slags can replace clinker, reducing CO_2 emissions and the use of virgin materials. The approach supports both circular economy goals and carbon reduction in two major industries.

Standardization could help harmonize material specifications, testing methods, and environmental safety thresholds across Europe. This would support broader market acceptance and regulatory clarity for using slags in construction.

REFRACTORY REUSE IN HIGH-TEMPERATURE INDUSTRIES

This synergy focuses on reusing spent refractory materials—critical components in high-temperature industrial processes such as steelmaking, glass, and cement production. While refractories are durable, their end-of-life management faces challenges like quality variability, lack of design for reuse, and classification as waste. Reintroducing these materials into production loops could significantly reduce the need for virgin raw materials and improve resource efficiency.

Standardization could support this by enabling traceability, setting quality benchmarks for secondary raw materials, and defining end-of-waste criteria. Clear standards would foster trust, improve safety, and facilitate circular practices across the refractory value chain. PDF

WASTE STEEL VALORISATION IN INDUSTRIAL SYMBIOSIS

This synergy addresses the reuse of waste steel from industrial processes, such as turnings, swarf, and production residues, in steelmaking and other value chains. While steel is inherently recyclable, barriers remain due to contamination, quality fluctuations, and limited data on material flows. Unlocking the full circular potential of waste steel can reduce energy use, cut emissions, and enhance raw material security for the EU.

Standardization could enable consistent classification, quality requirements, and traceability protocols for waste steel. Common standards would support efficient reuse, foster cross-sector collaboration, and align regulatory frameworks to scale industrial symbiosis practices across Europe.

POTENTIAL ADDITIONAL SYNERGIES TO EXPLORE

- Recovery and reuse of refractory bricks in construction
- Extraction of valuable metals from slags
- Cross-sector applications for secondary raw materials (e.g., road building)

WG 05 BATTERIES

OVERVIEW

This Working Group focuses on industrial symbiosis opportunities related to the reuse, recycling, and material recovery of batteries, particularly from electric vehicles (EVs). With demand for batteries growing rapidly and critical raw materials in short supply, also the recovery of lithium, cobalt, nickel, and rare earths is an essential part of building a resilient, circular battery value chain in Europe.

Key challenges include the safe dismantling of battery systems, standardization of material specifications, and enabling second-life applications. This WG will, for instance, explore how standardization can support circularity in battery systems by improving process reliability, safety, and material traceability across sectors.

SCOPE & FOCUS

Recycling and reuse of batteries, focusing on recovery of critical raw materials and energy storage symbiosis.

IDEAS TO EXPLORE

- Standardized dismantling and recovery procedures for lithium-ion batteries
- Definitions and testing for second-life battery applications
- Harmonized methods for assessing material quality and safety
- Standardization gaps in battery logistics, including transport and storage
- Potential for cross-sector reuse of recovered materials (e.g. steel, electronics, renewables)

ASSOCIATED SYNERGY (FROM RISERS FACTSHEETS)

EV BATTERY RECYCLING AND MATERIAL RECOVERY

This synergy connects end-of-life EV batteries with the materials and energy sectors to recover lithium, cobalt, and other critical raw materials. It helps reduce waste, strengthen resource security, and lower the environmental footprint of battery production.

Key standardization needs include battery dismantling procedures, material recovery methods, and safety standards. Harmonized approaches would also support second-life uses and enable safer, more efficient battery recycling across the EU.

POTENTIAL ADDITIONAL SYNERGIES TO EXPLORE

- Second-life applications for EV batteries (stationary storage)
- Standardized processes for battery disassembly and recycling
- Opportunities for industrial symbiosis through shared logistics and recovery facilities

WG 06 PACKAGING

OVERVIEW

This Working Group explores industrial symbiosis opportunities linked to packaging materials, with a focus on reuse, recycling, and circularity. Packaging is one of the most visible waste streams and a growing regulatory priority across Europe. While consumer packaging is widely discussed, this WG may also address industrial packaging systems—such as pallets, containers, and protective foils—which offer significant untapped potential for reuse across sectors.

Standardization can help support more circular design, improve sorting and recovery rates, and create common approaches to material traceability and safety. The WG provides a platform to discuss both technical challenges and the interface with emerging legislation, such as the Packaging and Packaging Waste Regulation (PPWR).

SCOPE & FOCUS

Reuse and recycling of packaging materials within industrial symbiosis frameworks, including circular design and material flows.

IDEAS TO EXPLORE

- Design and standardization of reusable industrial packaging systems
- Interfaces between circular packaging and EPR schemes
- Use of packaging waste in co-processing or material substitution
- Harmonized labelling, sorting, and traceability standards
- Alignment with PPWR and related EU circular economy initiatives

ASSOCIATED SYNERGY (FROM RISERS FACTSHEETS)

PLASTIC PACKAGING AS ALTERNATIVE FUEL IN CEMENT PRODUCTION

This synergy uses plastic packaging waste from various industrial sources as fuel or raw material in cement production. The process reduces dependency on virgin fossil fuels and supports waste valorization, especially for non-recyclable plastics.

The synergy shows high environmental impact through reduced landfilling and lower emissions. Standardization could focus on input specifications, co-processing safety, and pollutant thresholds in cement kilns.

POTENTIAL ADDITIONAL SYNERGIES TO EXPLORE

- Chemical recycling for high-quality raw materials
- Standardization of reusable industrial packaging (e.g., pallets, drums)
- Integration of packaging standards with circular economy initiatives (PPWR, SUP Directive alignment)

WG 07 WASTE HEAT

OVERVIEW

This Working Group addresses the recovery and reuse of industrial waste heat, a major opportunity for improving energy efficiency and reducing emissions across sectors. Waste heat is often released unused into the environment, despite its potential to be redirected to other industrial processes or urban infrastructure such as district heating networks.

The WG will, for instance, examine technical and regulatory barriers to heat recovery, including infrastructure compatibility, data exchange, and measurement standards. It also offers space to explore how industrial symbiosis can connect heat-supplying and heat-consuming partners through standardized frameworks for cooperation and performance validation.

SCOPE & FOCUS

Recovery and reuse of industrial waste heat across sectors, supporting energy efficiency and decarbonization.

IDEAS TO EXPLORE

- Standards for heat quality classification and usage thresholds
- Interfaces between industrial facilities and municipal heating grids
- Methods for monitoring and verifying waste heat flows
- Design and integration of cross-sector heat recovery systems
- Interlinkages with energy efficiency legislation and funding mechanisms

ASSOCIATED SYNERGY (FROM RISERS FACTSHEETS)

INDUSTRIAL WASTE HEAT RECOVERY FOR URBAN HEATING

This synergy involves recovering waste heat from industrial processes and supplying it to urban heating networks. By redirecting excess thermal energy from factories to city infrastructure, this approach improves energy efficiency and contributes to decarbonizing heating systems, especially in colder regions.

Its impact is highest in the “People” category, enhancing local energy security and lowering heating costs. Standardization could support this synergy through harmonized methods for heat recovery, transport infrastructure, and integration protocols between industrial and municipal systems.

POTENTIAL ADDITIONAL SYNERGIES TO EXPLORE

- Cross-sector heat exchange systems (e.g., between different industries)
- Waste heat integration into hydrogen production and industrial cooling
- Standardization for waste heat capture technologies and energy transfer protocols

WG 08 TEXTILES

OVERVIEW

This Working Group focuses on textile waste recovery, recycling, and reuse in the context of industrial symbiosis. The textile sector faces mounting pressure to transition toward circular practices due to its high environmental impact and low recycling rates. Industrial symbiosis offers pathways to valorize textile residues, enable cross-sector reuse, and support the shift toward fibre-to-fibre recycling and eco-design.

The WG will, for instance, explore how standardization can help define quality criteria for recycled fibres, support sorting and traceability, and align with the rapidly evolving EU regulatory landscape on textiles and extended producer responsibility (EPR).

SCOPE & FOCUS

Recycling and circularity in the textile sector, focusing on material recovery and reuse within industrial symbiosis systems.

IDEAS TO EXPLORE

- Standards for sorting and grading of post-consumer textiles
- Definitions for recycled fibre quality and usability
- Traceability schemes and digital labelling to support transparency
- Cross-sector use of non-textile-grade residues (e.g. insulation, composites)
- Alignment with EU policies such as the Textiles Strategy and EPR frameworks

ASSOCIATED SYNERGY (FROM RISERS FACTSHEETS)

TEXTILE WASTE RECYCLING

This synergy targets the recovery of unwearable post-consumer textiles for use as secondary raw materials in new textile production. It supports circularity in a high-impact sector, helping to reduce landfilling and resource use associated with virgin fibre production.

With strong environmental benefits, the synergy calls for standardization in sorting processes, quality definitions for recycled fibres, and labelling schemes to support transparency and traceability in textile value chains.

POTENTIAL ADDITIONAL SYNERGIES TO EXPLORE

- Chemical recycling of blended fabrics (cotton-polyester)
- Standardization for sorting and quality requirements for recycled fibres
- Integration of circular design principles and Extended Producer Responsibility (EPR) schemes

WG 09 ENERGY DATA AND GRIDS

OVERVIEW

This Working Group focuses on the exchange of energy-related data and the role of grid flexibility in supporting industrial symbiosis. As industries seek to reduce emissions and optimize energy use, the ability to offer or respond to demand-side flexibility becomes increasingly important. Industrial energy users can, for instance, contribute to grid stability while benefiting from **cost** savings and synergetic energy flows across sectors.

Standardization can play a crucial role in enabling data interoperability**,** real-time communication protocols**,** and frameworks for aggregated flexibility services**.** This WG offers a space to identify needs at the intersection of energy systems, digital infrastructure, and industrial symbiosis strategies.

SCOPE & FOCUS

Data exchange, flexibility services, and energy grid integration supporting industrial symbiosis and energy efficiency.

IDEAS TO EXPLORE

- Standards for energy flexibility interfaces and system interoperability
- Data exchange protocols between industries and grid operators
- Models for aggregated industrial demand response participation
- Frameworks for data privacy, consent, and cybersecurity
- Linking industrial symbiosis with energy communities and local grids

ASSOCIATED SYNERGY (FROM RISERS FACTSHEETS)

ENERGY DATA AND DEMAND-RESPONSE FOR GRID FLEXIBILITY

This synergy enables industrial actors to offer flexibility services—like demand-response—to the electricity grid, using real-time energy data exchange. It supports grid stability, better integration of renewables, and cost optimization for energy users.

The environmental and economic benefits are strong. Standardization can address data communication protocols, interoperability, and digital interfaces between industrial systems and energy market actors.

POTENTIAL ADDITIONAL SYNERGIES TO EXPLORE

- Standardization of data exchange protocols for energy flows
- Integration of renewable energy and storage systems within industrial symbiosis networks
- Data governance and interoperability standards for energy data sharing

WG 10 BIOMASS AND WASTE WOOD

OVERVIEW

This Working Group addresses industrial symbiosis involving organic residues, such as biomass from agriculture, forestry, and bio-based industries, including waste wood and bark. These materials can serve as feedstock for energy production, bio-based materials, or chemical conversion in various sectors. When used efficiently, they support both renewable energy targets and material circularity.

The WG will explore how standardization can help clarify quality criteria, ensure sustainable sourcing, and enable safe and efficient valorization of organic by-products. It also offers room to address challenges around cascading use, carbon accounting, and the interface with climate and energy legislation.

SCOPE & FOCUS

Valorization of biomass residues, including waste wood and bark, for energy generation, material use, and bio-based product development.

IDEAS TO EXPLORE

- Standards for biomass classification and quality control
- Criteria for sustainable sourcing and certification of biomass
- Interfaces between material and energy use (cascading use)
- Guidelines for safe handling and emissions control in biomass combustion
- Cross-sector use of biomass in construction, chemicals, and energy

ASSOCIATED SYNERGIES (FROM RISERS FACTSHEETS)

WASTE WOOD RECOVERY FROM THE PULP & PAPER SECTOR

Focuses on reusing bark and wood residues from the pulp and paper industry for energy generation or as input for material production. Supports landfill reduction and renewable energy generation. Standardization needs include biomass classification, handling protocols, and sustainability certification.

BIOMASS CONVERSION VIA FISCHER-TROPSCH SYNTHESIS

Involves converting biomass residues (e.g. urban organic waste, agricultural by-products) into synthetic fuels. Supports climate neutrality and energy independence. Standardization needs include feedstock specifications, performance criteria, and safety measures for biofuel production.

POTENTIAL ADDITIONAL SYNERGIES TO EXPLORE

- Carbon Capture and Utilization (CCU) in biomass energy processes
- Cascading use of biomass in bio-refineries (e.g., for chemicals, fuels, materials)
- Standards for sustainable sourcing and certification of biomass residues