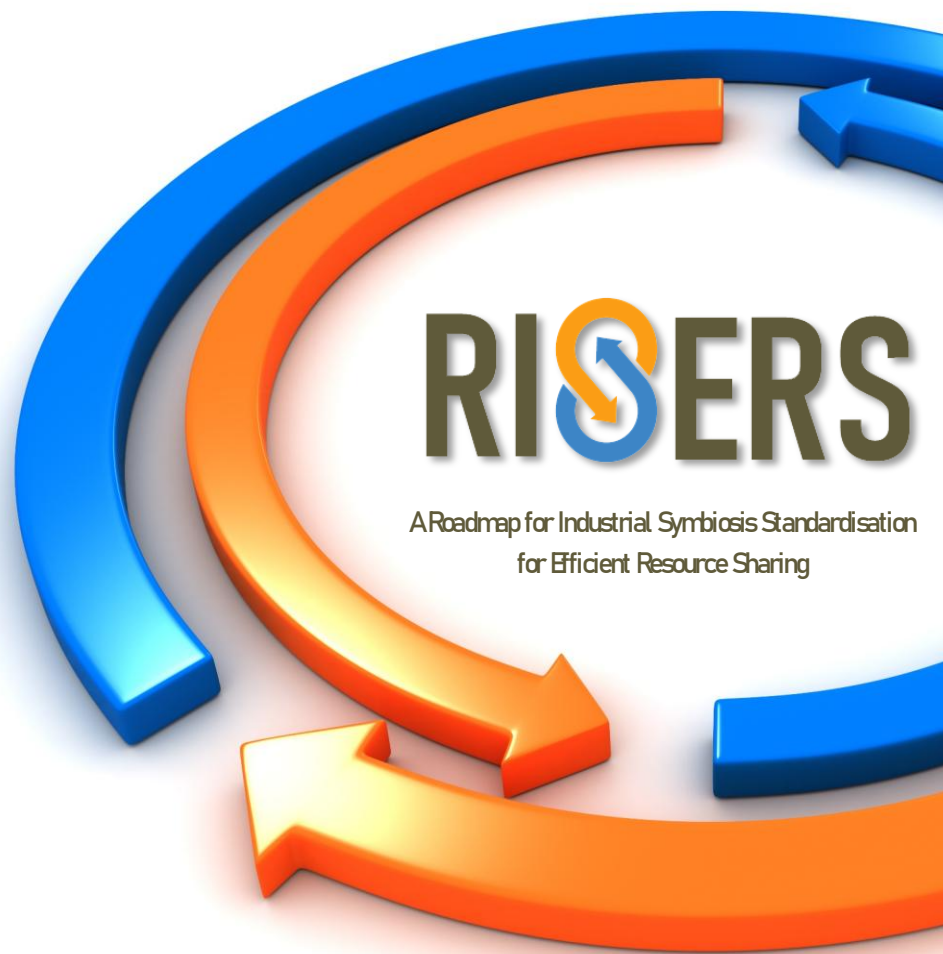




REPORT ON THE 1ST ROUND OF THE STAKEHOLDERS WORKSHOPS

DUE DATE: 30.06.2025

RESPONSIBLE PARTNER: CEN



Funded by
the European Union

Disclaimer:

The content reflects the views of the authors only. The European Commission is not liable for any use that may be made of the information contained herein.

This document contains information, which is proprietary to the RISERS consortium. Neither this document nor the information contained herein shall be used, duplicated or communicated by any means to any third party, in whole or in parts, except with the prior written consent of the RISERS consortium. This restriction legend shall not be altered or obliterated on or from this document.

Neither the European Commission nor the RISERS project consortium are liable for any use that may be made of the information that it contains.

DOCUMENT DETAILS

DELIVERABLE No.:	D8.3							
DELIVERABLE TITLE:	REPORT OF THE 1 ST ROUND OF THE STAKEHOLDERS ENGAGEMENT WORKSHOPS							
ANNEXES:	1A-C							
TYPE [*] :	R:	X	DMP:		DATA:		DEC:	
DISSEMINATION LEVEL ^{**} :	PU :	X	SEN:			EU CLASSIFIED:		
LEAD BENEFICIARY:	CEN							
DUE DATE:	30.06.2025							

*) R — Document, report; DMP — Data Management Plan; DATA — data sets, microdata, etc; DEC — Websites, patent filings, videos, etc

) **Public — fully open (automatically posted online); **Sensitive** — limited under the conditions of the Grant Agreement; **EU classified** — restraint-ue/eu-restricted, confidentiel-ue/eu-confidential, secret-ue/eu-secret under decision 2015/444

DOCUMENT HISTORY

ID	DATE	PERSON	CHANGE
1	30.05.2025	I.RATMAN-KLOSINSKA (IETU)	DOCUMENT CREATION
2	13.06.2025	SEBASTIAN VOGEL (CEN)	FIRST DRAFT VERSION
3	20.06.2025	ANDREA MOTOLA (ENSPIRE), ABI GLASER (ENSPIRE), IZABELA RATMAN-KLOSINSKA (IETU), MATEUSZ KORCZ (IETU), NICO KIMPEL (DIN)	PARTNER REVIEW
4	25.06.2025	CHRISTIAN GRUNEWALD (DIN), SEBASTIAN VOGEL	REVISION OF STAKEHOLDER INPUT
5	27.06.2025	SEBASTIAN VOGEL	SUBMISSION TO PROJECT COORDINATOR
6	30-06-2025	ANDREA MOTOLA, SEBASTIAN VOGEL	FINAL EDITS

LIST OF CONTENTS

Document details	3
Document history.....	3
List of contents	4
List of tables	6
List of Figures	6
List of Acronyms	8
1 Executive summary	9
2 Introduction.....	9
2.1 Background and objectives of the stakeholder consultation	10
2.2 Role of the Working groups and workshops in the project.....	10
2.3 Link to other project activities	11
3 Methodology.....	12
3.1 Stakeholder identification and engagement	13
3.2 Meetings format	14
3.3 Tools & platforms used	16
3.3.1 DNone.....	16
3.3.2 Miro.....	17
3.3.3 Slido.....	17
3.4 Pre-meetings preparation	18
3.4.1 Terms of Reference (ToR):.....	18
3.4.2 Working Groups Concept Note:.....	18
3.4.3 IP and Copyright Declarations	19
3.4.4 Fact Sheets on Synergies and WGs	19
3.4.5 Standardisation Landscape Overview.....	21
3.4.6 Stakeholder Coordination and Governance:.....	21
3.4.7 Promotional and Communication Materials.....	21
3.4.8 Kick-Off Meeting (28 March 2025):.....	22
4 Stakeholder profiles.....	23
4.1 Invited stakeholders	23
4.2 Working group composition	24

4.3	Geographic distribution	25
4.4	Participants' motivation.....	26
4.5	Gender representation	26
5	Meetings agendas and strucutre	26
5.1	General overview of meetings and their objectives	26
5.2	Kick-off Meeting (28 March 2025).....	27
5.3	Iterative WG Meetings (April–May 2025)	27
5.4	Interim Plenary Meeting (5 June 2025).....	29
6	Key Insights and Outcomes	29
6.1	Summary of stakeholder input.....	29
6.2	Common themes and priorities identified	30
6.3	Specific WG feedback.....	30
6.3.1	WG01 – Industrial Symbiosis in General.....	30
6.3.2	WG02 – End-Of-Waste.....	33
6.3.3	WG03 – Digitalisation & Data	35
6.3.4	WG04 – Steel, Slag & Refractories.....	37
6.3.5	WG05 – Batteries.....	39
6.3.6	WG06 – Packaging	41
6.3.7	WG07 – Waste Heat	41
6.3.8	WG08 – Textiles.....	43
6.3.9	WG09 – Energy Data & Grids.....	45
6.3.10	WG10 – Biomass.....	45
6.4	Feedback on further roadmap development	47
7	Next steps.....	48
7.1	How the outcomes will inform project activities	48
7.2	Plans for the second round of the WG consultationS	48
7.3	Continuous engagement strategies	49
8	Conclusion	50
9	Annexes	50

LIST OF TABLES

Table 1. Representatives of the WGs	13
Table 2. Share of organisations.....	24
Table 3. WG registration numbers.....	25
Table 4. 1 st Round of WG Meeting Agendas	28

LIST OF FIGURES

Figure 1. RISERS Stakeholder consultation goals	10
Figure 2. Positioning of WGs in relevant Work Packages in terms of inputs and outputs.....	12
Figure 3. Overview of the DIN.one section about the IS Standardisation Roadmap	16
Figure 4. Overview on the Miro boards used to facilitate WG meetings	17
Figure 5. Overview on Slido questions used during the Interim Plenary Session	18
Figure 6. Overview on Fact Sheets per priority synergy	20
Figure 7. Overview on the WG Fact Sheet.....	21
Figure 8. Overview on promotional banners	22
Figure 9. Screenshots from the WG KoM on March 28, 2025.....	23
Figure 10. Timeline of WG activities	27
Figure 11. Slido WG01 Question 1.....	31
Figure 12. Slido WG01 Question 2	32
Figure 13. Slido WG02 Question 1.....	33
Figure 14. Slido WG02 Question 2	34
Figure . Slido WG03 Question 1.....	35
Figure . Slido WG03 Question 2	36
Figure . Slido WG04 Question 1.....	37
Figure . Slido WG04 Question 2	38
Figure . Slido WG04 Question 3	38
Figure . Slido WG05 Question 1.....	40
Figure . Slido WG07 Question 1	42
Figure . Slido WG07 Question 2	42

Figure . Slido WG08 Question 144

Figure . Slido WG08 Question 244

Figure . Slido WG10 Question 1.....46

Figure . Slido WG10 Question 246

LIST OF ACRONYMS

Abbreviation	Explanation of abbreviation
CEN	Comité Européen de Normalisation
DIN e.V.	Deutsches Institut für Normung e.V.
EIT-RM	EIT Raw Materials GmbH
ENSPIRE	Enspire Science Ltd
FhG	Fraunhofer Gesellschaft zur Förderung der angewandten Forschung e.V.
IETU	Instytut Ekologii Terenów Uprzemysłowych
ISL	International Synergies Ltd
ISQ	Instituto de Soldadura e Qualidade
UGent	Universiteit Gent
AB	Advisory Board
CE	Circular Economy
DEC	Websites, patent filings, videos, etc.
DMP	Data Management Plan
EC	European Commission
EoW	End of Waste
IP	Intellectual Property
IPR	Intellectual Property Rights
IS	Industrial Symbiosis
KPI	Key Project Indicators
PEDR	Plan for the Exploitation and Dissemination of Results
PU	Public (dissemination level)
R&D	Research and Development
R&I	Research and Innovation
SC	Steering Committee
ToR	Terms of Reference
WP	Work Package
WG	Working Group

1 EXECUTIVE SUMMARY

The RISERS project is developing a European Standardisation Roadmap for Industrial Symbiosis (IS) through a structured, stakeholder-driven co-creation process. Central to this effort are ten thematic Working Groups (WGs), which convened in spring 2025 to identify challenges, prioritise standardisation needs, and formulate early recommendations. These activities are documented in Deliverable D6.3 “Roadmap Outline”, which synthesises the results of the first consultation round and provides the basis for further roadmap development under WP7.

The first round of Working Group consultations engaged 94 experts from over 15 countries, representing large industry and SMEs (37%), academia (21%), R&I support organisations (15%), sectoral initiatives, standardisation bodies, and public authorities. Stakeholders were recruited through an open call and targeted outreach, and participated in structured online meetings facilitated by CEN and project partners using tools such as DIN.one, Miro, and Slido.

Key insights emerging from the first round include:

- **Legal fragmentation**, particularly divergent End-of-Waste criteria, is a major obstacle to cross-border symbiosis and material reuse;
- **Digitalisation** is seen as a key enabler for IS, with needs identified around interoperable data formats, product traceability, and digital product passports;
- **Terminology** and classification issues (e.g. lack of harmonised IS definitions or unclear by-product status) hinder coherent standardisation efforts;
- **Cross-sector synergies** require stronger alignment between industrial actors, energy systems, and data infrastructures.

Each WG produced a set of preliminary findings and recommendations, presented at the Interim Plenary Meeting on 5 June 2025. These results are consolidated in D6.3, which identifies both horizontal standardisation themes (e.g. End-of-Waste, digitalisation) and sector-specific needs (e.g. in steel, batteries, waste heat, textiles, and biomass). The deliverable also outlines how WG input will inform subsequent roadmap development and technical committee guidance (D7.1 and D7.2).

The second round of consultations (September–October 2025) will validate and deepen these results, followed by a Final Plenary Session in November 2025. Additional stakeholder engagement activities will ensure continuous input, broaden participation (especially in underrepresented sectors), and align RISERS outputs with CEN, CENELEC, and ISO standardisation activities.

Through this inclusive process, RISERS ensures that its roadmap reflects real-world implementation needs, builds on current regulatory and R&I frameworks, and supports the uptake of industrial symbiosis practices across Europe.

2 INTRODUCTION

The RISERS project aims to develop a European Standardisation Roadmap for Industrial Symbiosis (IS) through a structured, stakeholder-driven process. Central to this process is

the organisation of thematic Working Groups (WGs), which facilitate expert dialogue across sectors and geographies.

This chapter outlines the context and objectives of the stakeholder engagement activities, describes the role of the Working Groups and workshops within the RISERS project, and explains how these efforts are aligned with the project's broader structure and goals.

2.1 BACKGROUND AND OBJECTIVES OF THE STAKEHOLDER CONSULTATION

Through a structured and inclusive co-creation process, RISERS ensures that the roadmap reflects the practical needs, challenges, and priorities of industry, policy stakeholders, research organisations, and standardisation bodies. The process is also designed to incorporate innovation outcomes from research and innovation (R&I) into standardisation efforts.

The specific objectives of the stakeholder consultation process are outlined in Figure 1.

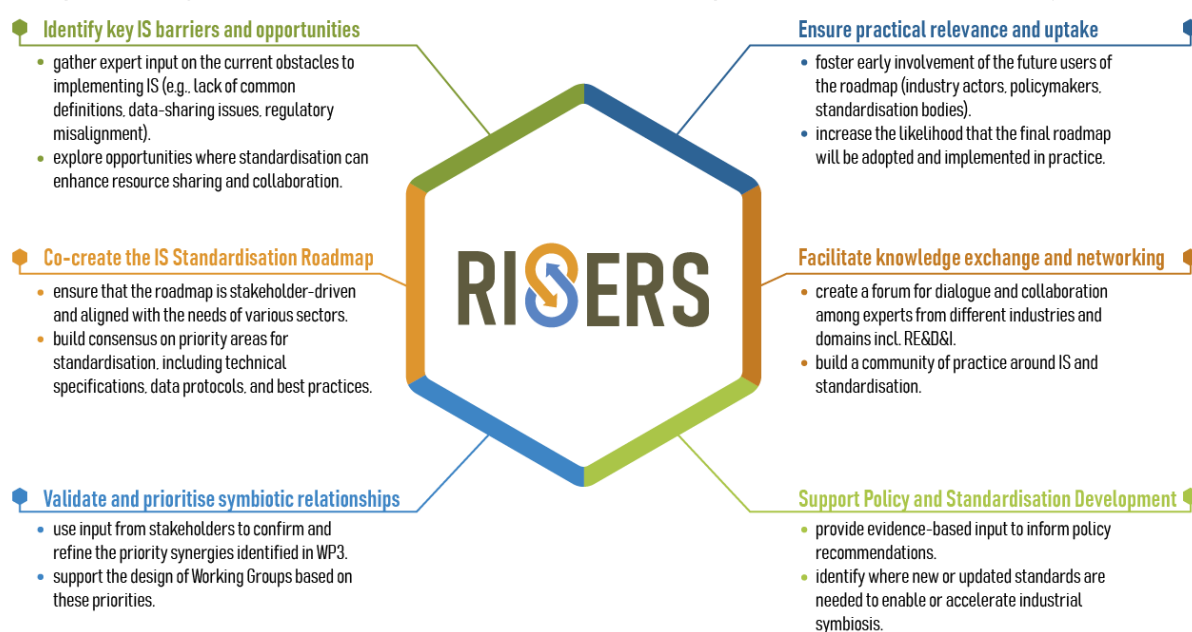


Figure 1. RISERS Stakeholder consultation goals

2.2 ROLE OF THE WORKING GROUPS AND WORKSHOPS IN THE PROJECT

The RISERS Working Groups serve as the core mechanism for engaging stakeholders in the co-creation of the IS Standardisation Roadmap. Bringing together expertise from industry, research and innovation, policy, and standardisation bodies, the WGs provide a structured forum for dialogue across sectoral and disciplinary boundaries.

Each WG contributes to the roadmap by:

- Identifying challenges and gaps related to industrial symbiosis in their sector or topic area;
- Prioritising needs for new or revised standards based on practical relevance;

- Providing practitioner-informed input grounded in real-world experience;
- Formulating early recommendations for standardisation, best practices, and regulatory alignment;
- Supporting the dissemination and uptake of results by stakeholders.

The Working Group topics were shaped following the analysis done in WP3. It proposed 3 horizontal and 7 vertical WGs, which were confirmed at the Kick-off-Meeting (KoM). The process to define the initial WG scopes is described in D3.3 'Gaps and Opportunities for Industrial Symbiosis Standardisation in priority synergies'. The WGs were free to fine-tune their scope, as for instance WG 10 Biomass & Waste Wood, which removed "& Waste Wood" from the title to highlight the overarching issue of biomass. The WG processes are further outlined in Chapter 3.

2.3 [LINK TO OTHER PROJECT ACTIVITIES](#)

The stakeholder engagement process, particularly the work of the RISERS Working Groups (WGs), is closely integrated with the project's objectives and work package structure. It serves as a key implementation tool to strengthen stakeholder dialogue and co-create the Industrial Symbiosis Standardisation Roadmap.

In particular, the WGs contribute to the project objective of increasing stakeholder engagement by establishing active exchange between the standardisation community and industrial symbiosis (IS) practitioners. The WGs operate within a broader input-output logic across several Work Packages, as illustrated in Figure 1. Their roles and linkages include:

- **WP3 (Mapping of EU priority resources with IS potential):** This work package provided the analytical basis for forming the WGs. The identification and characterisation of priority synergies informed the structure and thematic focus of the ten WGs.
- **WP5 (Policy and regulatory framework):** The WGs were encouraged to consider relevant policy frameworks (particularly End-of-Waste (EoW) criteria) as a horizontal theme during their discussions. WP5 also provided stakeholder mapping inputs. Conversely, insights and recommendations emerging from the WGs will feed into policy recommendations.
- **WP4 (Integration of R&I results):** Although WP4 officially begins after the first WG round (M19), its preparatory work (particularly the database of R&I projects) was used to identify and invite experts to join the WGs. In the next phase, WP4 will synthesise how standardisation needs identified by the WGs relate to ongoing or past R&I efforts, creating a feedback loop between practitioner experience and research impact.
- **WP6 and WP7 (Standardisation Roadmap and Guidelines):** These WPs coordinate the development of the IS Standardisation Roadmap and accompanying guidelines for Technical Committees. The WGs form the backbone of this process, serving as co-design platforms that provide targeted content, prioritised needs, and early recommendations.

- **WP8 and WP9 (Dissemination and stakeholder engagement):** These WPs support the setup, coordination, and promotion of the WGs. They also ensure that WG results are effectively communicated and exploited throughout the project. Feedback loops between the WGs and external stakeholders, including further consultations, are foreseen to enhance the roadmap's final quality and uptake.

As a result, the WGs act as both contributors and beneficiaries in the RISERS knowledge cycle, translating WP3, WP5, and WP6 findings into practical dialogue while informing WP4, WP7, WP8, and WP9 with real-world insights. This structure reinforces RISERS' ambition to develop a roadmap grounded in both policy and practice.

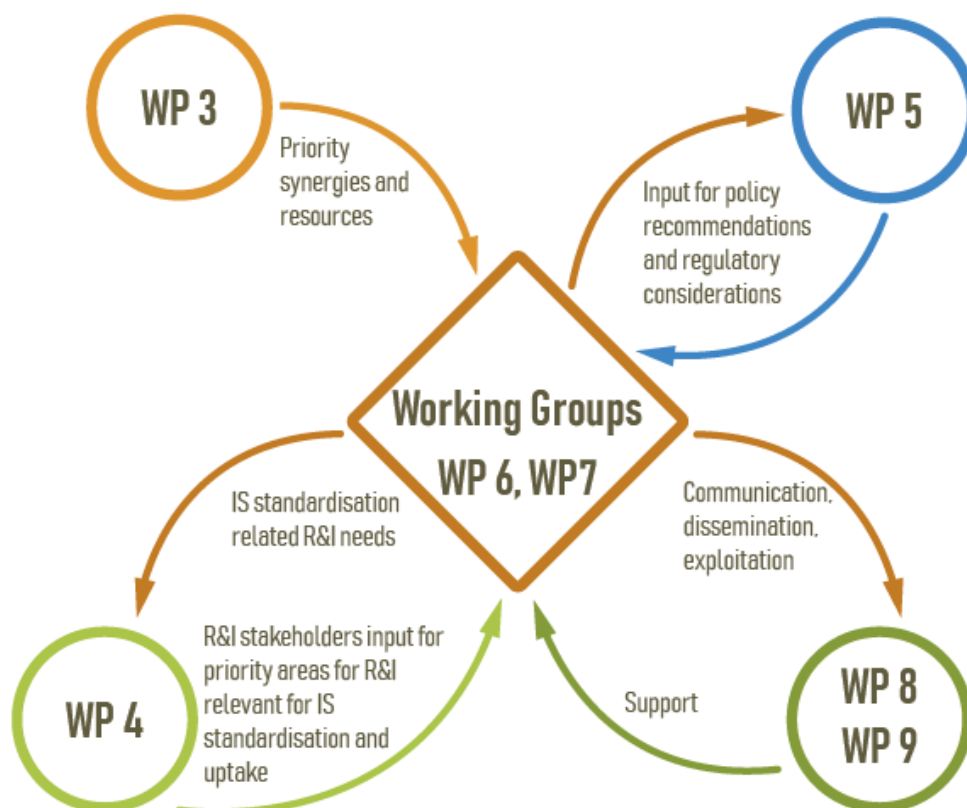


Figure 2. Interaction of WGs with Work Packages

3 METHODOLOGY

This chapter describes the methodology applied during the first round of stakeholder engagement workshops in the RISERS project. It covers the process for identifying and involving participants, the format and facilitation of the Working Group meetings, and the tools used to support structured dialogue and knowledge co-creation.

The approach aimed to ensure transparency, inclusiveness, and consistency across all ten Working Groups while allowing flexibility to reflect the specificities of each topic area.

3.1 STAKEHOLDER IDENTIFICATION AND ENGAGEMENT

The RISERS stakeholder consultation process followed a structured, transparent, and inclusive approach to ensure broad participation from actors relevant to industrial symbiosis and standardisation. The main elements included:

- **Open Call for Experts:** An open invitation was launched via the RISERS website and promoted through project social media, partner networks, and targeted outreach to stakeholders identified in WP3 (priority synergies), WP4 (R&I projects), and WP5 (policy actors). DIN.one served as the central platform for registration and group coordination. Technical Committees relevant to IS (as identified under Task 6.1) were also directly invited.
- **Kick-Off Meeting (28 March 2025):** This online meeting introduced the purpose, structure, and timeline of the Working Groups. It attracted 69 participants and marked the formal start of the consultation process. Participants were encouraged to register for specific WGs aligned with their expertise or interests.
- **Working Group Meetings (April–May 2025):** Each WG held at least one meeting, with many convening twice. These meetings were designed to facilitate structured discussions on IS challenges, regulatory gaps, and standardisation needs. CEN provided a facilitation concept to support effective moderation. Each WG was supported by a designated moderator or co-moderator from the consortium or external stakeholder.
- **Plenary Meeting (June 5, 2025):** The first plenary meeting brought all 10 WGs and the public together to present preliminary outputs and feed into D6.3 ‘Roadmap Outline’. An additional objective was to collect similarities and common challenges.
- **Ongoing Recruitment and Open Participation:** Registration to the Working Groups remains open, allowing additional experts to join as the roadmap process evolves. This supports continuous input and reflects the open nature of RISERS.

A total of **94 experts** registered for one or more Working Groups. Their profiles and contributions are discussed in detail in Chapter 4. The assigned moderators and WG leaders are listed in Table 1.

Table 1. Representatives of the WGs

Working Group	Focus	WG Leader / Moderator	Co-moderator
WG 01 IS in General	Cross-sector synergies and IS systems	James Woodcock (ISL)	Nico Kimpel (DIN)
WG 02 End of Waste	Regulatory status and standards on waste reuse	Faye Page (ISL)	Sebastian Vogel (CEN and CENELEC)

WG 03 Digitalisation & Data	Data sharing, monitoring & digital twins for IS	Robert Howard (ISL)	Sebastian Vogel (CEN and CENELEC)
WG 04 Steel, Slag and Refractories	Industrial symbiosis in steel production & by-products	Alina Racu (EIT Raw Materials)	Christian Grunewald (DIN)
WG 05 Batteries	Recycling, reuse, and symbiotic opportunities	Rüdiger Meyer (Phoenix Contact GmbH & Co. KG)	Alina Racu (EIT Raw Materials)
WG 06 Packaging	Circular packaging and material reuse in IS	Yotam Yosef Avital (Enspire)	Nico Kimpel (DIN)
WG 07 Waste Heat	Utilization of excess heat across industries	Lieven Demolder (U-Gent)	Sebastian Vogel (CEN and CENELEC)
WG 08 Textiles	Textile recycling and IS applications	Yuki Nakagawa (Shimadzu Europa GmbH)	Christian Grunewald (DIN)
WG 09 Energy Data & Grids	Data exchange and energy grid symbiosis	Stavros Spyridakos (IEECP)	Lieven Demolder (U-Gent)
WG 10 Biomass	Organic waste valorization in IS	Yuki Nakagawa (Shimadzu Europa GmbH)	Nico Kimpel (DIN)

3.2 MEETINGS FORMAT

All Working Group (WG) meetings in the first consultation round were conducted online to enable broad accessibility and cross-border participation. Sessions typically lasted between two and three hours and followed a structured format designed to generate actionable outcomes while allowing flexibility to reflect topic-specific needs.

To ensure consistency across the ten Working Groups, CEN developed a **Working Group Concept Note** (see Annex 1b), which was shared in advance with all moderators. It defined the objectives of each meeting, provided sample agendas, and outlined a set of facilitation principles. These were further supported by interactive tools such as Miro, Slido, and DIN.one (see section 3.3).

Structure and Facilitation Approach

Each WG held at least one online meeting, with several groups convening a second session to validate results and draft initial recommendations. All sessions followed a three-part structure, designed to move from problem definition to prioritisation and recommendation development:

1. Opening & Context Setting

Introductions and orientation on the RISERS project, WG scope, and meeting goals.

2. Challenge Mapping & Needs Identification

Participants discussed barriers to industrial symbiosis, relevant synergies, and gaps in standardisation or regulation. Guiding questions were used to prompt inputs on:

- Existing industrial symbiosis practices and unexplored synergy potentials;
- Regulatory, technical, economic, and social barriers;
- Standardisation and policy gaps;
- Relevant stakeholders and roles.

3. Prioritisation & Initial Recommendations

Participants identified areas requiring urgent standardisation attention, prioritised topics through voting or consensus, and formulated early recommendations for further exploration.

To support evidence-based discussion and stakeholder inclusivity, moderators were requested to apply the following facilitation principles:

- Encourage balanced participation across stakeholder types (e.g. SMEs, industry, academia, public authorities);
- Focus on IS rather than general circular economy discourse, and on standardisation rather than the ecosystem;
- Synthesise interim results through summary boards and written outputs;
- Use targeted guiding questions to structure group inputs;
- Enable asynchronous follow-up via DIN.one and Miro.

While the general structure was maintained across all WGs, groups had flexibility to tailor discussions. Some invited external technical experts, followed up via email, or made use of dedicated online collaboration spaces between meetings.

Interactive Content Collection via Miro

To guide discussion and structure contributions during the meetings, interactive Miro boards were used extensively. These served as collaborative workspaces where participants could respond to predefined blocks of guiding questions using sticky notes, arrows, and visual clustering. The approach followed five main segments:

1. **Best Practices & Existing Synergies:** Participants identified current and potential IS applications in their field and mapped sending/receiving sector relationships.
2. **Implementation Requirements:** The discussion explored necessary steps to realise synergies, including infrastructure, stakeholder roles, and cooperation mechanisms.
3. **Barriers & Challenges:** Inputs were categorised under technological, legal and standardisation, economic, and social barriers to facilitate structured analysis.
4. **Standardisation Gaps:** Participants examined where new or revised standards are needed — distinguishing between technical/quality aspects and organisational/monitoring dimensions.
5. **Prioritisation & Next Steps:** Participants used dot-voting and additional sticky notes to highlight the most urgent standardisation needs and identify key questions for future meetings.

This methodology enabled a balance between structured facilitation and collaborative input, ensuring that diverse perspectives were captured and translated into actionable insights.

3.3 TOOLS & PLATFORMS USED

To facilitate stakeholder engagement and support the co-creation of roadmap content, RISERS deployed a combination of online platforms tailored to different phases of the consultation process. They enable a smooth, low-barrier engagement process that balanced structure and flexibility. They also ensured that input was traceable and transparent, forming the foundation for Deliverable D6.3 and subsequent roadmap development. Images in the following sections are meant to provide a quick glance at the kind of tools while later sections will go more into details.

3.3.1 DIN.ONE¹

DIN.one served as the central workspace for Working Groups. It hosted general information, the Terms of Reference, registration forms, meeting schedules, and supporting materials such as synergy fact sheets, standard mappings, and draft contributions. It also allowed registered users to post written comments, upload documents, and remain engaged between meetings. Registration remained open throughout the process to allow new participants to join.

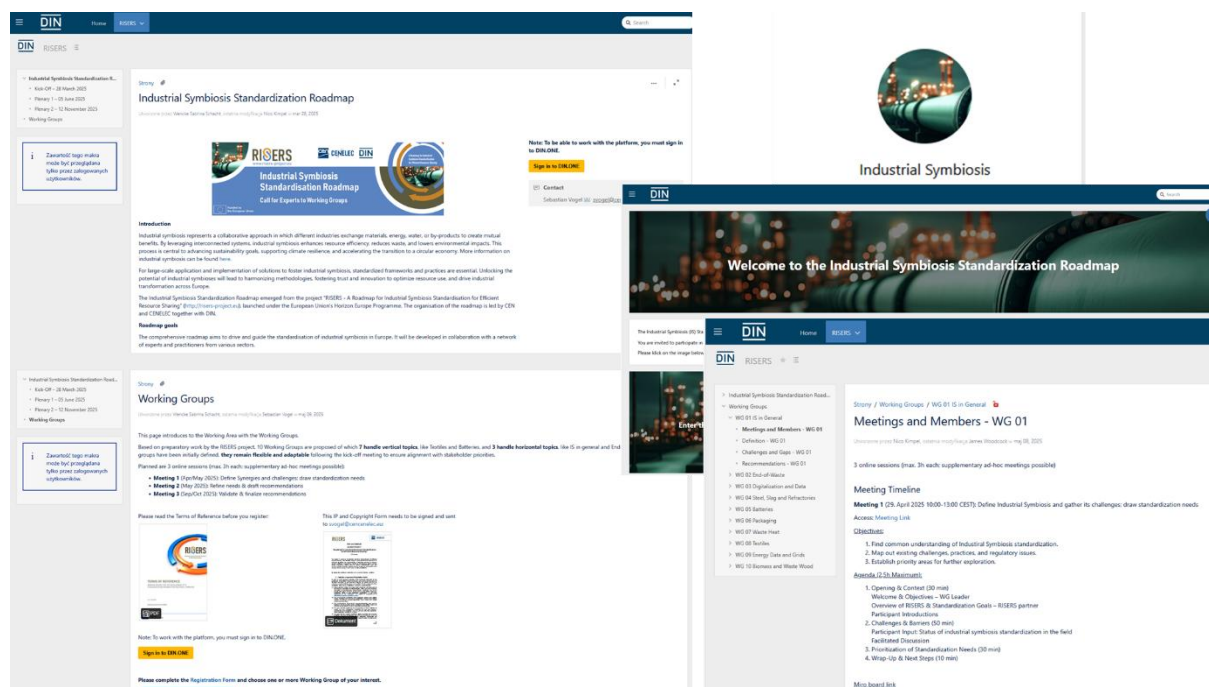


Figure 3. Overview of the DIN.one section about the IS Standardisation Roadmap

¹ <https://din.one/display/RISERS/Industrial+Symbiosis+Standardization+Roadmap>

3.3.2 MIRO

For many Working Groups, a Miro board was used during meetings to support real-time collaboration. These boards helped collect ideas, sort priorities, and visually map barriers, needs, and potential standardisation actions. The boards were available to participants during and after the meetings and remain accessible via the corresponding sections on DIN.one.

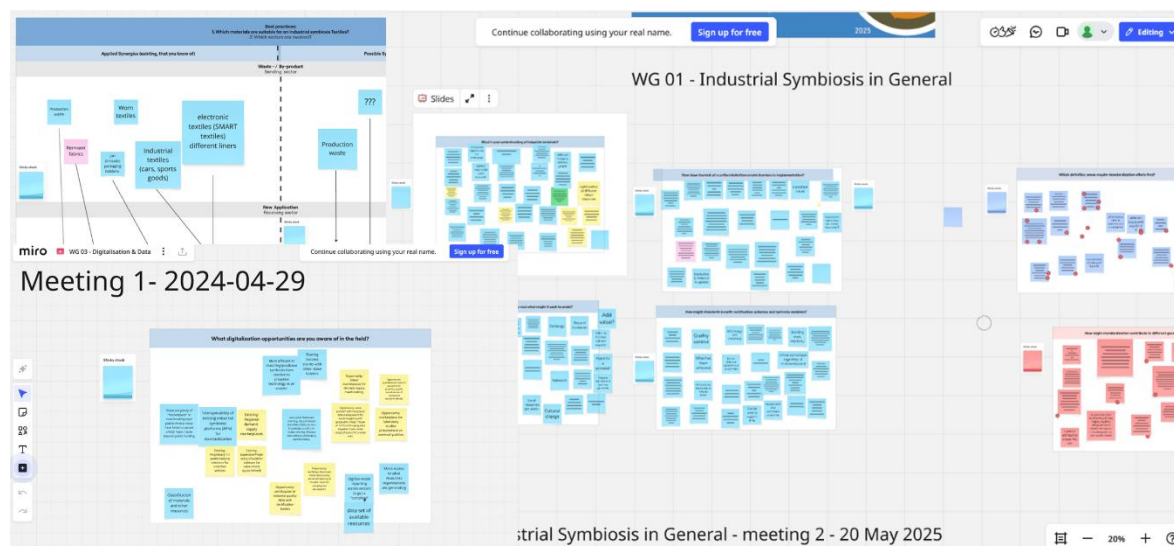


Figure 4. Overview on the Miro boards used to facilitate WG meetings

3.3.3 SLIDO

During the Interim Plenary Meeting on 5 June 2025, the Slido platform was used to gather structured feedback following each WG presentation. Moderators prepared short polls — ranging from ranking and multiple-choice questions to open-ended prompts — tailored to the key questions emerging from each WG. A total of 18 polls were prepared across the WGs. Results were discussed in real time and are presented in Chapter 6 of this report.



Figure 5. Overview on Slido questions used during the Interim Plenary Session

3.4 PRE-MEETINGS PREPARATION

To ensure clarity, alignment, and a consistent methodology across all ten Working Groups, a set of preparatory materials and support tools was developed and made available to participants prior to the meetings. The pre-meeting phase included the following elements:

3.4.1 TERMS OF REFERENCE (TOR):

Developed jointly by CEN, DIN, and IETU, and in consultation with all RISERS partners, the ToR defined the objectives, structure, and participation rules of the Working Groups. These were published on the DIN.one platform and served as the reference framework for stakeholder engagement. The ToR can be read in Annex 1a.

3.4.2 WORKING GROUPS CONCEPT NOTE:

CEN and DIN produced a concept note providing guidance on how to conduct WG sessions. It included sample agendas, facilitation tips, guiding questions, and scope descriptions for

each of the ten Working Groups. The document also offered advice on aligning discussions with the roadmap objectives. See Annex 1b for more details.

3.4.3 IP AND COPYRIGHT DECLARATIONS:

To acknowledge expert contributions transparently, participants wishing to have their name included in the final roadmap publication must sign the RISERS-CEN intellectual property (IP) declaration form. This ensures that contributions can be properly credited and used in accordance with standardisation publication rules. The document is shown in Annex 1c.

3.4.4 FACT SHEETS ON SYNERGIES AND WGS:

Participants were given access to two sets of fact sheets:

1. Synergy fact sheets² produced under WP3, which described each of the priority resource flows and sectors relevant for industrial symbiosis;
 2. Working Group fact sheet³ developed by WP6 and WP8, explaining each WG's thematic focus and prompting discussion questions.
- These materials helped ensure a shared understanding of the project scope and provided a starting point for discussions.

² <https://risers-project.eu/wp-content/uploads/2025/02/RISERS-Synergy-Fact-Sheets-10-pieces-2-page-each.pdf>

³ https://risers-project.eu/wp-content/uploads/2025/04/RISERS-WG-factsheets_v4a.pdf

Synergy Fact Sheet

EV-BATTERIES

Recover Lithium and other rare earth elements, reuse for energy storage

Introduction

The transition to electric vehicles (EVs) is changing the global energy landscape. Electric vehicles, however, particularly those with long-range, rely on lithium-ion batteries. The use of lithium-ion batteries is growing rapidly, but the use of lithium-ion batteries is also increasing. The use of lithium-ion batteries is also increasing. The use of lithium-ion batteries is also increasing.

Supplying sector(s):

Receiving sector(s):

Technical Feasibility:

Environmental Impact:

Health & Safety:

References:

Authors:

Published by:

Disclaimer:

Summary:

Abstract:

Keywords:

Tags:

Links:

Images:

Videos:

Documents:

Other:

Comments:

Reactions:

Shares:

Print:

Download:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

Help:

Privacy:

Terms:

Contact:

Support:

Feedback:

</



Figure 7. Overview on the WG Fact Sheet

3.4.5 STANDARDISATION LANDSCAPE OVERVIEW:

In addition to the thematic material, participants received mapping tables of relevant standards and technical committees based on earlier work in Task 6.1 and WP3. These resources supported informed discussion and avoided duplication of existing standardisation efforts.

3.4.6 STAKEHOLDER COORDINATION AND GOVERNANCE:

A dedicated Coordination Committee was established to oversee the process. It included representatives from the Advisory Board, WP and WG leaders. Its role was to validate the WG setup, support moderation, and ensure coherence across groups.

3.4.7 PROMOTIONAL AND COMMUNICATION MATERIALS:

To promote the WG process and increase stakeholder visibility, IETU developed multimedia content such as banners and announcements for LinkedIn and the project website. This helped maximise outreach for the Kick-Off and Interim Plenary sessions.



Figure 8. Overview on promotional banners

3.4.8 KICK-OFF MEETING (28 MARCH 2025):

The official launch of the WG process provided orientation on project goals, roadmap objectives, and WG participation. It attracted 69 registered participants and served to activate new registrations and build momentum ahead of the first round of meetings.

Based on the analysis of email domains, participants came from industry, research, public bodies, and innovation platforms. Approximately 40% of participants were affiliated with **companies**, including large industrial manufacturers, SMEs, and consultancies. Their expertise spans materials processing, environmental services, construction, and digital solutions for circular business models. Roughly 30% were affiliated with **universities and research institutions**, contributing scientific and technical knowledge across engineering, environmental science, and systems innovation. Around 17% represented **national standardisation bodies, public agencies**, and related institutions, signalling involvement of regulatory and normative actors. Another 6% were connected to cross-sectoral platforms, international networks, or innovation support initiatives focused on circular economy implementation. The remaining 7% of addresses used generic domains (such as Gmail or Yahoo), making it difficult to determine their organisational affiliation. These entries may correspond to self-employed professionals, independent experts, or participants without a formal institutional link.

This composition provides a foundation for cross-sector collaboration, combining technical knowledge, regulatory insight, and practical implementation perspectives from the outset.

This package of preparatory work laid the groundwork for a structured yet flexible engagement process. It helped Working Group participants focus their contributions and link them directly to RISERS objectives.

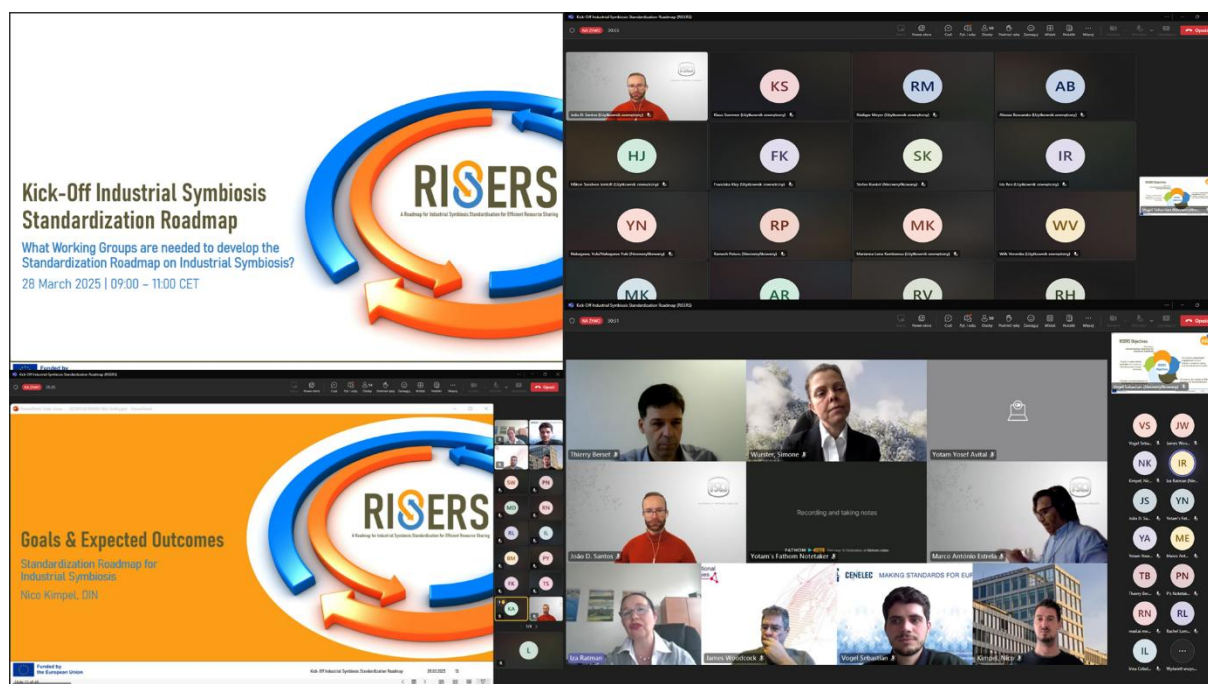


Figure 9. Screenshots from the WG KoM on March 28, 2025

4 STAKEHOLDER PROFILES

This chapter provides an overview of the stakeholders who participated in the first round of Working Group meetings. It outlines the diversity of participants in terms of stakeholder type, geographic origin, sectoral affiliation, and levels of experience with standardisation.

These insights help assess the inclusiveness and representativeness of the consultation process and inform future engagement strategies in the RISERS project.

4.1 INVITED STAKEHOLDERS

The call for participation in the RISERS Working Groups was open to all interested stakeholders. Targeted outreach focused on groups with demonstrated relevance to industrial symbiosis and standardisation, including:

- Industry representatives (both large companies and SMEs) involved in circular economy or resource-sharing initiatives;
- Standardisation bodies and Technical Committee members;
- Policymakers and regulatory experts;
- Researchers and academic experts;
- R&I coordination bodies and innovation clusters;
- Civil society and environmental NGOs;

- Start-ups and technology providers active in monitoring, digitalisation, or valorisation tools.

This broad stakeholder landscape ensured that discussions reflected practical, regulatory, and scientific perspectives.

4.2 WORKING GROUP COMPOSITION

Through a combination of open recruitment and targeted invitations, **94 individuals** registered to join one or more of the ten RISERS Working Groups (WGs) on standardisation in support of Industrial Symbiosis.

Most participants represent **large industry and SMEs**, accounting for approximately 37% of all entries. **Academic institutions** make up the second-largest group with around 21%, followed by **R&I supporting organisations** at 15%. **Sectoral industrial initiatives** contribute about 11%, while both **start-ups** and representatives from the **general public and community** each represent 5% of the total. Other organisation types — including **research funders, standards bodies, and public authorities** — are each represented by approximately 1–4%, reflecting a broad distribution. Overall, the group is weighted toward applied industrial and academic expertise, with more limited representation from public bodies and formal standardisation organisations.

Table 2. Share of organisations

Organisation Type	Share of Participants
Large Industry and SMEs	37%
Academia	21%
R&I Supporting Organisations	15%
Sectoral Industrial Initiatives	11%
Start-Ups	5%
General Public and Community	5%
Other (e.g. funders, SDOs, public)	1–4%

In terms of familiarity with standardisation, approximately 55% indicate having *some points of contact* with standardization, suggesting moderate familiarity or occasional involvement. Around 31% describe themselves as *active experts in standardization*, highlighting a strong pool of experienced contributors. About 13% report *no prior experience*, showing openness to engage newcomers. Overall, the group combines seasoned expertise with fresh perspectives, supporting inclusive and informed discussions.

Participants most offered to contribute through **participation in meetings and workshops** (42.5%) and **commenting on content** (37.5%), highlighting some interest in interactive and feedback-driven engagement. Around 15.6% indicated willingness to support **preparation of content**, while 4.4% expressed readiness to take on **leadership roles in Working Groups**. This distribution shows a commitment to collaborative input, with a smaller but notable share of participants prepared to take on more active and responsible roles.

The table below summarises registration per group. Actual participation numbers were much lower depending on meeting times, overlaps with other meetings, and potentially relevance of the topics. Particularly, WG 06 and 08 had less than five participants in the first meeting, causing a break in activities and new efforts in engaging experts. However, in comparison, participation in the horizontal WGs (01-03) reached more adequate numbers.

Table 3. WG registration numbers

Working Group	Number of registered experts
WG 01 IS in General	33
WG 02 End of Waste	29
WG 03 Digitalisation & Data	21
WG 04 Steel, Slag and Refractories	18
WG 05 Batteries	19
WG 06 Packaging	14
WG 07 Waste Heat	15
WG 08 Textiles	12
WG 09 Energy Data & Grids	17
WG 10 Biomass	15

4.3 GEOGRAPHIC DISTRIBUTION

Participants in the Working Groups represent a broad geographic spread, with contributions from at least 15 European countries. This analysis was based on information provided by participants during the registration process, including self-declared affiliations, email domains (e.g. .de, .it, .es), as well as identifiable institutional names. While not all entries included explicit country information, the majority could be assigned based on these indicators.

The strongest participation comes from Germany and the United Kingdom, reflecting the presence of established industrial symbiosis initiatives, academic research hubs, and active involvement in European standardisation. Other countries with notable representation include Italy, Spain, France, Greece, and Poland, alongside participants from the Netherlands, Sweden, Latvia, Austria, and Lithuania. Several participants are also affiliated with pan-European organisations or EU-wide networks.

Although the distribution is diverse, it is not uniform. Regions such as Southern and Eastern Europe are somewhat underrepresented, pointing to the importance of further outreach to ensure balanced geographic involvement.

4.4 PARTICIPANTS' MOTIVATION

With the registration, participants were asked to describe their motivation to contribute. Their input spans a broad sectoral range, including areas such as construction, steel, batteries, textiles, packaging, biomass, waste heat, and ICT. Several participants are active in EU-funded projects (e.g. CORALIS, THESEUS, ENERSTAMP, JUSTEM, STORM, SYMBI, and FEDECOM) and national or European standardisation committees (e.g. CEN/TC 187, TC 411, TC 408, TC 104).

Many respondents expressed direct interest in supporting the development of standards for industrial symbiosis. Motivations include the desire to overcome regulatory barriers, harmonise definitions, and support the uptake of circular practices across sectors. Several participants aim to align the working group activities with their institutional mandates or research agendas. Others are driven by practical needs in their daily work, such as product conformity, quality control, digitalisation of waste data, or the integration of secondary raw materials into industrial processes.

4.5 GENDER REPRESENTATION

No gender data was collected as part of the participant registration process. Based on indicative interpretation of names and available affiliations, approximately one third of Working Group participants appear to identify as women. While this remains below parity, it reflects a reasonably diverse participant base considering the technical and industrial focus of the RISERS initiative. Future activities may consider collecting anonymised diversity data (e.g. gender, age group, or career stage) to better monitor inclusivity and representation across all Working Groups.

5 MEETINGS AGENDAS AND STRUCTURE

This chapter summarises how the first round of Working Group meetings was organised and implemented. It outlines the overall timeline, shared agenda structure, and facilitation approach used to guide discussions across groups.

It also highlights key differences between the initial Kick-Off meeting, the thematic WG sessions, and the Interim Plenary, illustrating how these formats contributed to building shared understanding and generating input for the RISERS roadmap.

5.1 GENERAL OVERVIEW OF MEETINGS AND THEIR OBJECTIVES

RISERS Working Group activities began with a joint **Kick-Off Meeting** on 28 March 2025 and continued with **two rounds of WG-specific online sessions** held between April and May 2025. These sessions provided the basis for a structured, inclusive consultation on industrial symbiosis standardisation needs.

The overall timeline is illustrated in the figure below:

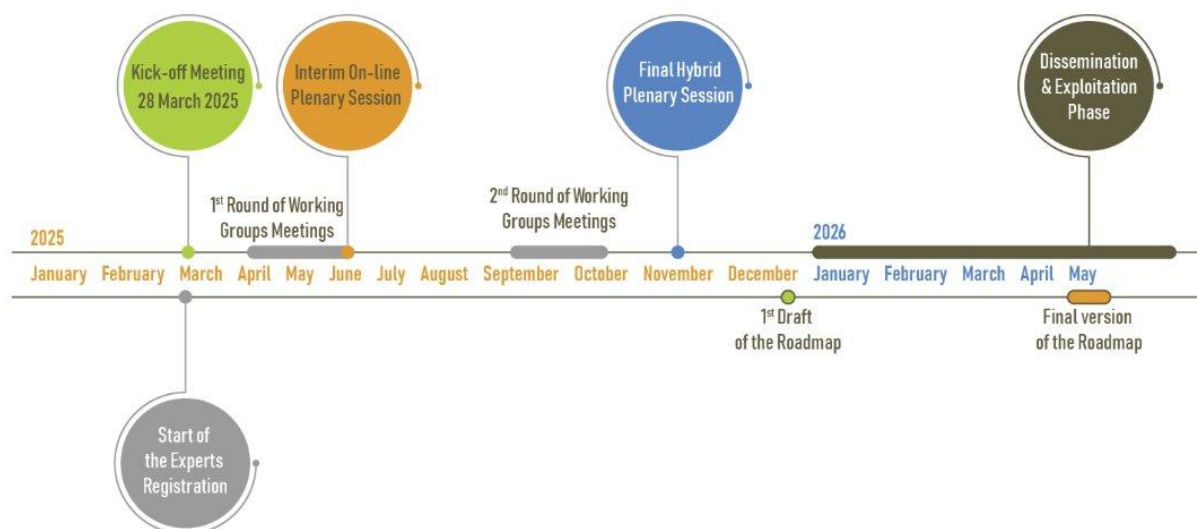


Figure 10. Timeline of WG activities

5.2 KICK-OFF MEETING (28 MARCH 2025)

The Kick-Off Meeting introduced participants to the RISERS roadmap objectives, the role of the Working Groups, and the overall project context. With 69 participants attending, the event helped consolidate interest, explain expectations, and encourage further registrations to individual WGs.

Agenda overview:

- 09:00 – 09:10 Welcome remarks by CEN and CENELEC representative(s)
- 09:10 – 09:25 Context of the Standardisation Roadmap on Industrial Symbiosis (RISERS)
- 09:25 – 09:45 Goals and expected outcomes of the Roadmap + open discussion
- 09:45 – 10:15 Introduction to Working Groups + open discussion
- 10:15 – 10:30 Formation of Working Groups
- 10:30 – 11:00 Next steps and key dates

5.3 ITERATIVE WG MEETINGS (APRIL–MAY 2025)

Each WG held at least one session, with seven convening a second meeting to validate findings and refine draft recommendations before the Interim Plenary. The meetings followed a shared agenda structure, adapted from the WG Concept Note developed by CEN, and focused on three main steps:

- Identifying IS-related barriers and challenges;
- Mapping standardisation gaps and regulatory issues;

- Prioritising needs and drafting early recommendations.

The following agenda was proposed in the WGs Concept Note (Table 2). Participants were guided through targeted questions to ensure input was aligned with RISERS objectives. Facilitation tools such as Miro supported collaborative discussion and structured feedback collection. WGs were free to diverge from the proposed structure, but all of them chose to follow the provided guidelines.

Table 4. 1st Round of WG Meeting Agendas

Meetings:	Meeting 1: Problem Definition & Standardisation Needs	Meeting 2: Refinement & Initial Recommendations
Objectives	1. List potential synergy areas and identify barriers and gaps in industrial symbiosis standardisation. 2. Map out existing challenges, practices, and regulatory issues. 3. Establish priority areas for further exploration.	1. Validate challenges and needs identified in Meeting 1. 2. Develop initial recommendations for standardisation & regulation. 3. Prepare content for the Interim Report (June 2025).
Agenda (2,5 h max)	1. Opening & Context (30 min) • Welcome & Objectives – WG Leader • Overview of RISERS & Standardisation Goals – RISERS PM • Participant Introductions 2. Challenges & Barriers (50 min) • Expert Input: Status of industrial symbiosis standardisation in the field (10 min) • Facilitated Discussion: (40 min with, e.g., Miro board) • What synergy areas are participants aware of in the field? • What practical barriers do stakeholders face? • What technical, regulatory, and market challenges exist? • What standards currently apply, and where are gaps? 3. Prioritization of Standardisation Needs (30 min) • Which synergies areas require standardisation efforts first? • How could new or revised standards address identified gaps? • Prioritization exercise: Identify top 3–5 critical areas.	1. Recap & Updates (15 min) • Review of Meeting 1 outcomes – WG Leader • Feedback from Coordination Committee 2. Refining Standardisation Needs (45 min) • How could existing standards be adapted or created? • Where are policy and regulatory gaps that need addressing? • What international best practices can be leveraged? 3. Drafting Initial Recommendations (45 min) • Develop early standardisation recommendations. • Assign tasks for drafting Interim Report contributions. 4. Wrap-Up & Next Steps (15 min) • Confirm next steps for Interim Report to be presented at the plenary. • Plan for Meeting 3 (Finalization).

5.4 INTERIM PLENARY MEETING (5 JUNE 2025)

The Interim Plenary served as a cross-cutting milestone to:

- Present and discuss draft findings from all ten Working Groups;
- Identify shared themes and cross-sector priorities;
- Collect structured feedback via Slido polls as an input for the first outline of the IS Standardisation Roadmap (presented in D.6.3).

Agenda overview:

09:30 – 09:40 Welcome, Izabela Ratman-Kłosińska, IETU

09:40 – 10:10 Working Group briefings

- WG 01 IS in General, WG 02 End-of-Waste, WG 03 Digitalisation & Data

10:10 – 10:25 Break

10:25 – 11:35 Working Group briefings

- WG 04 Steel, Slag & Refractories, WG 05 Batteries, WG 06 Packaging, WG 07 Waste Heat, WG 08 Textiles, WG 09 Energy Data & Grids, WG 10 Biomass & Waste Wood

11:35 – 11:55 Open Discussion, James Woodcock, ISL

11:55 – 12:00 Next Steps, Sebastian Vogel, CEN and CENELEC

Each WG was given a short presentation slot to summarise their process and early recommendations. Structured polls followed each session via Slido, allowing participants to rate proposals and suggest additions.

Notably, no Slido questions were used for:

- **WG06 – Packaging**, due to insufficient group activity;
- **WG09 – Energy Data & Grids**, due to timing constraints and ongoing discussions.

The outputs of the Interim Plenary formed a key input into the drafting of Deliverable D6.3 (Roadmap Outline), while also guiding preparation for the second round of consultations.

6 KEY INSIGHTS AND OUTCOMES

The insights summarised in this chapter reflect stakeholder input collected during the Interim Plenary Meeting via Slido and open discussions. They also complement the detailed outputs of each Working Group presented in Deliverable D6.3. While D6.3 provides an updated account of discussions, this chapter highlights key commonalities and feedback shared across groups to support further roadmap development.

6.1 SUMMARY OF STAKEHOLDER INPUT

The first round of Working Group consultations provided a set of inputs from 94 participants across 10 groups. Discussions focused on identifying practical challenges, standardisation needs, and regulatory gaps in implementing industrial symbiosis (IS). Each WG delivered concrete findings, which were shared at the Interim Plenary on 5 June 2025. To support structured feedback, 17 Slido polls were conducted, including 16 WG-specific questions and one plenary-wide reflection.

Across the Working Groups, participants engaged actively in identifying barriers, prioritising standardisation opportunities, and highlighting where regulatory or market fragmentation limits implementation. These insights serve as the foundation for the first roadmap outline (D6.3) and will guide further prioritisation in the next round of WG consultations.

6.2 COMMON THEMES AND PRIORITIES IDENTIFIED

Despite differences in focus, several themes emerged consistently across WGs:

- **Legal fragmentation and lack of harmonised End-of-Waste criteria** were cited as major obstacles, especially for material reuse across borders.
- **Digital tools**, including digital product passports and data-sharing standards, were widely seen as enablers of traceability, transparency, and sectoral integration.
- **Lack of agreed terminology and inconsistent IS definitions** were reported as barriers to coherent policy and standardisation development.
- **Interoperability and alignment between sectors**, especially in energy, data, and waste management, emerged as a key cross-cutting concern.
- Participants also called for greater **integration of R&I results** into standardisation processes to accelerate implementation and uptake.

These common points support a roadmap structure that distinguishes between **vertical themes** (linked to specific sectors or materials) and **horizontal themes** (cross-cutting enablers like EoW and digitalisation).

6.3 SPECIFIC WG FEEDBACK

The following sections provide a quick glance at all WGs. For a structured synthesis of these findings and their integration into the draft roadmap structure, see Deliverable D6.3.

Additionally, feedback provided by stakeholders (via Slido) at the plenary meeting concerning recommendations for IS standardisation based on the briefings provided by individual WGs aspects as well as policy and regulatory aspects in some cases is presented.

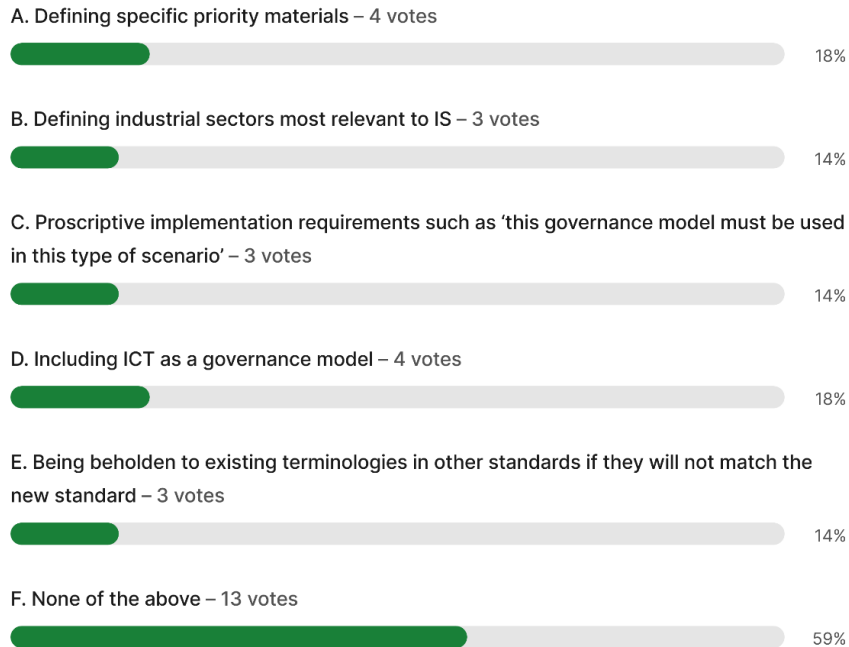
6.3.1 WG 01 – INDUSTRIAL SYMBIOSIS IN GENERAL

This group explored how inconsistent terminology and unclear governance models hinder the scaling of industrial symbiosis (IS). Key recommendations include defining a standardised IS terminology, questioning assumptions like proximity requirements, and developing a new paradigm for classifying by-products and wastes.

Slido Q1 asked which areas should be included in a general IS standard (e.g. ICT as governance, sector priorities), and Q2 invited suggestions for additional elements.

 [WG01-Q1] Which of the following areas do you find most relevant for inclusion in the general Industrial Symbiosis (IS) standard?

Multiple choice poll  22 votes  22 participants



slido

Figure 11. Slido WG01 Question 1

 [WG01-Q2] Are there any other areas that should be addressed by the general IS standard?

Open text poll  12 responses  11 participants

-  Anonymous
mapping IS potential
-  Anonymous
End of waste and by-product
-  Anonymous
I would like to connect back to the previous question, I think it is important to follow existing standards and terminology as far as possible but of course not when it is not fit for purpose
-  Anonymous
How reused items are classified as not waste and use of EWC codes
-  Anonymous
Waste declassification procedures
-  Anonymous
List of existing standards
-  Anonymous
ISO 59000
-  Anonymous
contract template for collaboration
-  Anonymous
No
-  Anonymous
Terminologie
-  Anonymous
establishing trust
-  Anonymous
None

slido

Figure 12. Slido WG01 Question 2

WG01 will continue its work by:

- Refine rationale and scope for a future IS standard, focusing on definitions, terminology, governance models, and business frameworks.
- Integrate feedback from the Interim Plenary (Slido poll results and open comments) into the WG's ongoing work.
- Hold next WG meeting around September to deepen discussions and consolidate recommendations.

- Coordinate with other WGs, especially WG02 (End-of-Waste) and WG03 (Digitalisation & Data), to address overlapping issues like terminology and regulatory alignment.
- Prepare refined input for the final RISERS plenary session on 12 November 2025, contributing to the draft standardisation roadmap.
- Encourage new participation via the DIN.ONE platform to broaden stakeholder involvement.

6.3.2 WG 02 – END-OF-WASTE

Participants highlighted that current EOW procedures often obstruct IS due to legal uncertainty and national fragmentation. A horizontal EOW standard was proposed, supported by vertical standards for specific materials.

Slido Q1 asked how EOW criteria support IS (rated from strongly supporting to strongly hindering), and Q2 ranked key barriers to address first (e.g. legal complexity, inconsistent application).

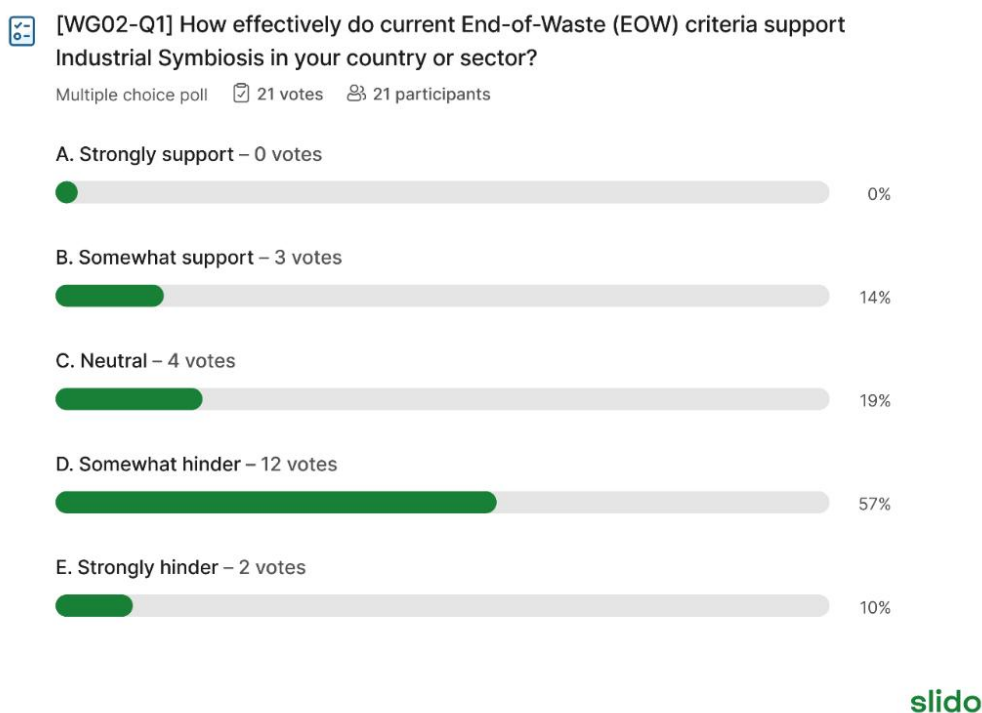
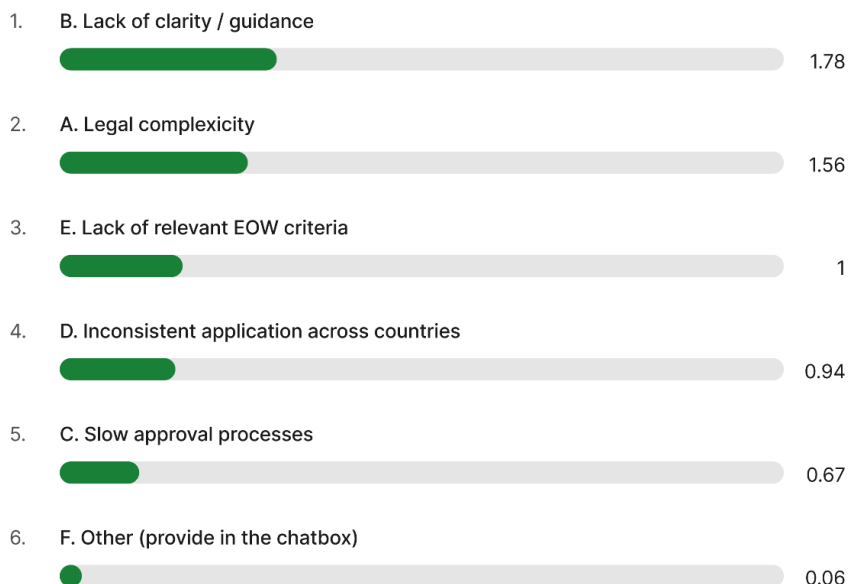


Figure 13. Slido WG02 Question 1

 [WG02-Q2] Which of the following barriers should be addressed first to improve the application of EOW criteria in Industrial Symbiosis?

Ranking poll  18 votes  18 participants



slido

Figure 14. Slido WG02 Question 2

In the next phase, WG02 will:

- Further explore how fragmented end-of-waste criteria hinder industrial symbiosis and identify practical standardisation opportunities.
- Develop the concept of a layered approach: one horizontal IS standard and sector-specific vertical standards for material reuse.
- Examine the feasibility of harmonised EU-wide end-of-waste criteria, while maintaining flexibility for innovation and local conditions.
- Clarify the relationship between legislation and standards, with a focus on how standards can support but not replace legal frameworks.
- Prepare more concrete recommendations in the next WG meeting (expected around September), building on plenary feedback.
- Coordinate with other WGs dealing with waste status, especially WG01 and material-specific groups (e.g. biomass, steel, packaging).
- Contribute to the November 2025 plenary with an updated set of recommendations and inputs to the RISERS roadmap.

6.3.3 WG 03 – DIGITALISATION & DATA

The discussion focused on the need for better material classification, interoperable data sharing, and lifecycle traceability tools like digital product passports. Standardising metadata and supporting DPP implementation were key takeaways.

Slido Q1 ranked four areas by standardisation potential, including metadata, DPPs, and data confidentiality. Q2 gathered further needs for digitalisation in IS.



Figure 15. Slido WG03 Question 1

 [WG03-Q2] What additional aspects of Digitalization & Data would be practically useful for your organization that haven't been addressed?

Open text poll  11 responses  11 participants

-  Anonymous
One stop shop
-  Anonymous
anonymous exchange of data
-  Anonymous
bridging circularity gap with required reporting
-  Anonymous
Alignment on the data cross country
-  Anonymous
Standard for open data commons for Industrial Symbiosis
-  Anonymous
Central knowledge hub on applicable national legislation
-  Anonymous
Countries seem obsessed with creating their own platforms. This reinventing the wheel and preventing cross border collaboration
-  Anonymous
information on quality of material
-  Anonymous
AAS + DPP
-  Anonymous
same metrics?
-  Anonymous
Methode to provide the data for the passports

slido

Figure 16. Slido WG03 Question 2

In the second WG 03 round, participants will:

- Further develop proposals for improving material classification systems, especially the European Waste Catalogue (EWC), to better serve industrial symbiosis.
- Explore the concept of functional metadata to accompany EWC codes and enable more granular, application-relevant data on material quality and reuse potential.
- Assess how digital product passports (DPPs) could support industrial symbiosis, and whether they can be adapted or extended to include relevant IS data.
- Develop standardisation recommendations on data formats, interoperability, and traceability across platforms and value chains.

- Reassess the role of data sharing and confidentiality—acknowledging the complexity and sectoral variation—and consider limited, practical use cases.
- Review and incorporate feedback from the plenary Slido questions and open responses into the next WG meeting (planned for autumn).
- Prepare revised contributions for the RISERS roadmap and November 2025 plenary session, particularly on enabling data infrastructure for symbiosis.

6.3.4 WG 04 – STEEL, SLAG & REFRACTORIES

This WG tackled technical and regulatory barriers to slag reuse, steel scrap recovery, and refractory recycling. Recommendations included harmonised assessment methods, legal clarity on waste/by-product status, and EU-wide EoW criteria for post-use refractories.

Slido Q1 and Q2 asked participants to prioritise standardisation and regulatory needs related to slag, and Q3 addressed priorities for refractory reuse.

 [WG04-Q1] Standardisation: Please rank the following recommendations in order of priority — from most to least important — based on their impact and urgency

Ranking poll  15 votes  15 participants

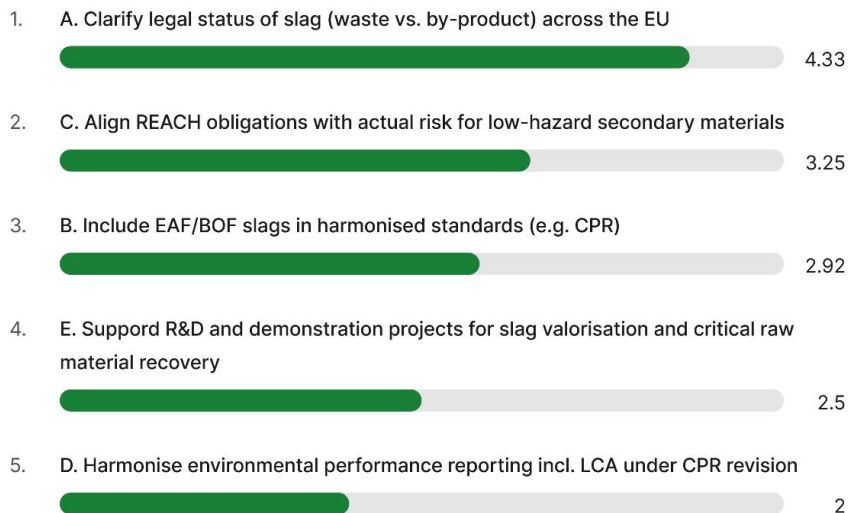
1. A. Develop harmonised assessment methodologies for slag properties, especially for BOF & EAF slags.
 2.27
2. B. Develop standards for slag composition, especially for variable types like EAF and LF slags
 2.07
3. C. Develop standards for slag treatment processes for the creation of by-products
 1.67

slido

Figure 17. Slido WG04 Question 1

 [WG04-Q2] Regulatory & Policy: Please rank the following recommendations in order of priority — from most to least important — based on their impact and urgency

Ranking poll  12 votes  12 participants

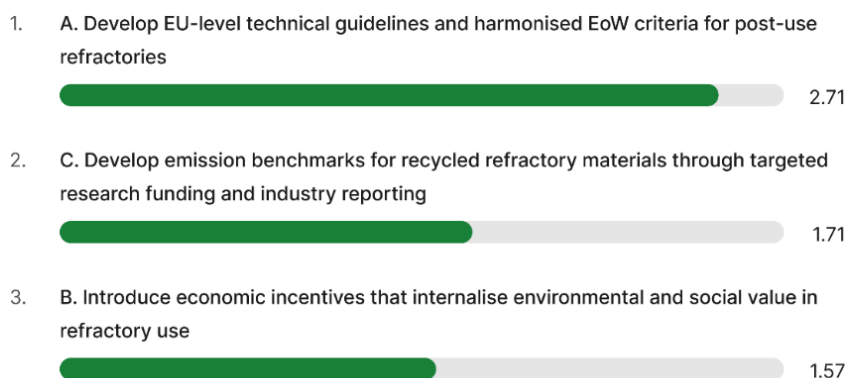


slido

Figure 18. Slido WG04 Question 2

 [WG04-Q3] Please rank the following recommendations in order of priority — from most to least important — based on their impact and urgency

Ranking poll  14 votes  14 participants



slido

Figure 19. Slido WG04 Question 3

The group agreed to reconvene in autumn 2025 to:

- Deepen the analysis of slag valorisation, particularly for BOF and EAF slags, focusing on harmonised standards for composition, treatment processes, and environmental performance reporting.
- Collect barriers connected to the legal status of slags across Member States and how standardisation can support consistent end-of-waste or by-product recognition.
- Address technical challenges related to variable slag composition and traceability by identifying suitable assessment methodologies.
- Further examine regulatory and technical gaps for steel scrap reuse, especially concerning contamination, end-of-waste criteria, and export rules.
- Expand the analysis of refractory waste reuse, with a focus on EU-level guidelines, harmonised criteria, and economic incentives.
- Prepare more focused recommendations in the next WG meeting for the November 2025 plenary with updated priorities and input.

6.3.5 WG 05 – BATTERIES

The group discussed challenges in battery disassembly, second-life certification, and the lack of harmonised EU standards for reuse. Recommendations included standards for battery grading, automated disassembly, and a unified Battery Passport format.

Slido Q1 ranked standardisation needs (e.g. second-life grading, design rules, Battery Passport)

 [WG05-Q1] Standardisation: Please rank the following recommendations in order of priority — from most to least important — based on their impact and urgency

Ranking poll  10 votes  10 participants

1. B. Develop EU-level standards for: second-life battery grading (e.g., A/B/C), safety certification and State of Health (SoH) testing, transport safety and certification frameworks
 3.7
2. A. Create design rules aiming at repairability and automated disassembly for remanufacturing and recycling of batteries
 3.2
2. D. Align criteria for second-life reuse among OEMs and recyclers through industry-led platforms, which could feed into future standards
 3.2
4. C. Standardize data formats and requirements for second-life battery approval, integrating repair history and analytical test results into digital battery passports
 3.1
5. E. Ensure the Battery Passport includes: BMS access, SoH data, traceability and diagnostic information in a standardized digital format
 1.8

slido

Figure 20. Slido WG05 Question 1

In the second WG round, the group aims to:

- Prioritise the development of new standards for second-life batteries, including grading, safety certification, state-of-health testing, and transport safety.
- Explore standardised protocols for automated disassembly and reuse preparation to address current technical and economic barriers.
- Clarify the legal definitions and responsibilities related to battery ownership, waste status, and second-life applications.
- Advocate for the inclusion of standardised data formats in the digital battery passport, covering BMS access, traceability, diagnostics, and repair history.
- Address the gap in EU-level standards for battery reuse, drawing lessons from existing standards.
- Promote industry dialogue to align second-life criteria across OEMs and recyclers, potentially leading to industry-led pre-standardisation work.

- Expand stakeholder involvement in the next WG meeting (planned for autumn), especially from battery manufacturers and recyclers, and prepare contributions for the November 2025 plenary.

6.3.6 WG 06 – PACKAGING

Despite limited attendance, the discussion addressed opportunities for reusing plastic waste within IS, such as converting packaging into protective elements. Due to low participation, the group is currently on hold, but individual contributions are being pursued via alternative RISERS channels.

No Slido questions were reported.

WG06 is currently on hold but may be reactivated in the second round of WG meetings, potentially with a revised or expanded scope. This could include:

- Rebuild the working group, as the first meeting lacked sufficient expert participation and was not able to generate substantive discussion.
- Broaden the scope beyond plastic packaging to include other packaging types (e.g. metal, paper, multi-material) if this improves relevance and stakeholder interest.
- Identify and engage new participants, especially from industry, research, and packaging-related standardisation bodies.
- Explore opportunities for industrial symbiosis through packaging reuse, modular packaging design, and integration with sectors like construction or food.
- Connect with insights from the DIN Circular Economy Roadmap and avoid duplication with well-established work in CEN/TC 261 or other relevant committees.
- Consider whether RISERS should integrate packaging under another Working Group if reactivation fails.
- Reassess the viability and direction of WG06 in autumn 2025, ahead of the final plenary and roadmap consolidation.

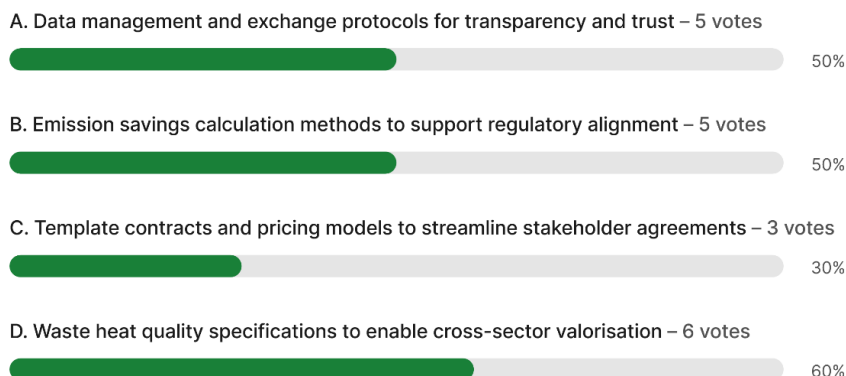
6.3.7 WG 07 – WASTE HEAT

Participants identified technical, regulatory, and economic barriers to cross-sector heat recovery. Key proposals included standardising data exchange, template contracts, and emission savings methods.

Slido Q1 asked about impactful standardisation areas (e.g. transparency protocols, pricing models), and Q2 ranked strategies to overcome governance barriers, such as municipal heat planning.

 [WG07-Q1] Which of the following areas holds the greatest potential for impactful standardisation in advancing waste heat reuse across sectors?

Multiple choice poll  10 votes  10 participants

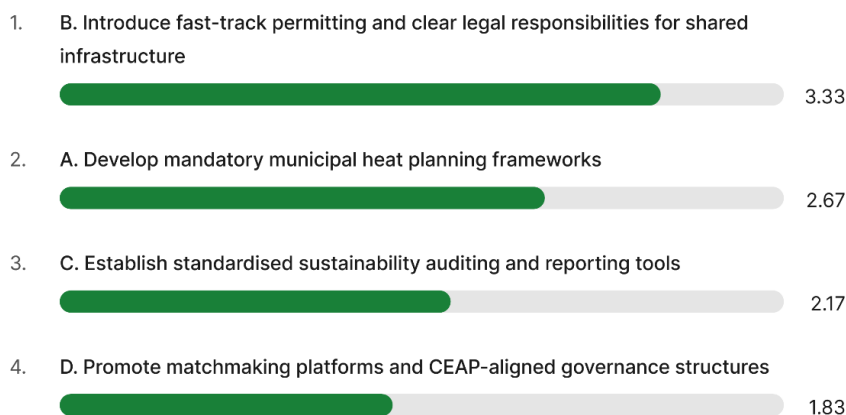


slido

Figure 21. Slido WG07 Question 1

 [WG07-Q2] Rank — from most to least important — what would be the most effective strategy to overcome regulatory and governance barriers in waste heat integration?

Ranking poll  6 votes  6 participants



slido

Figure 22. Slido WG07 Question 2

In its second meeting, WG07 will:

- Compare regional best practices (e.g. from Denmark, the Netherlands, or Germany);
- Map potential linkages to energy community frameworks and energy efficiency requirements;

- Refine recommendations for data management, emissions accounting, and template contracts to support cross-sectoral waste heat reuse.
- Explore standardisation needs for energy management systems, performance monitoring, and integration with district heating and cooling networks.
- Develop proposals for standardised sustainability reporting tools (e.g. carbon intensity, efficiency indicators) for waste heat applications.
- Address permitting and governance barriers by analysing where fast-track approvals, legal clarity, and planning obligations could be supported by standards.
- Investigate the role of industrial heat pumps and digital solutions (e.g. digital twins, AI) in enabling new waste heat synergies.
- Coordinate with other WGs (e.g. WG09 on Energy Data & Grids) on data interoperability and with sectoral stakeholders to align with ongoing initiatives.
- Prepare a more detailed contribution for the RISERS roadmap and final plenary in November 2025, including prioritised standardisation proposals.

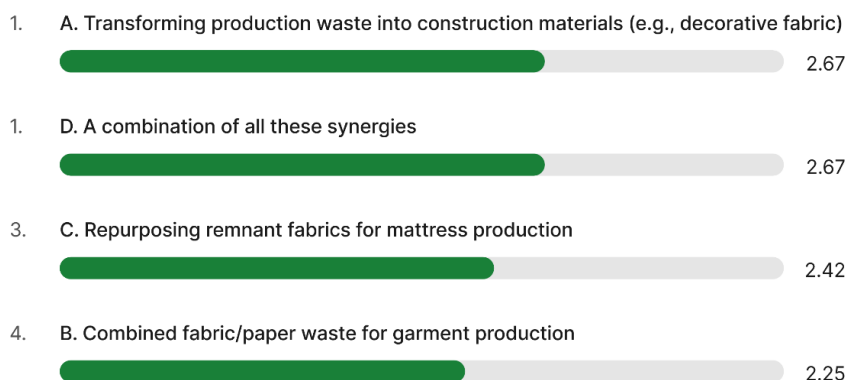
6.3.8 WG 08 – TEXTILES

This WG focused on fibre-to-fibre recycling, blended fabric separation, and new synergies with construction and paper industries. Regulatory support and stakeholder involvement were identified as essential enablers.

Slido Q1 ranked reuse synergies (e.g. fabric into construction, mattresses), and Q2 asked how to overcome transport and logistics barriers (e.g. regional hubs, tracking systems).

 [WG08-Q1] Rank the following synergies in order of relevance for best opportunities for collaboration between industries

Ranking poll  12 votes  12 participants

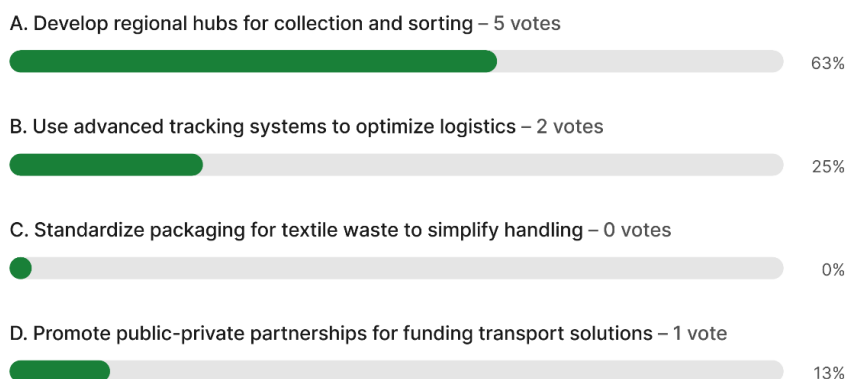


slido

Figure 23. Slido WG08 Question 1

 [WG08-Q2] What would be the most effective way to address logistical barriers in transporting and storing textile waste?

Multiple choice poll  8 votes  8 participants



slido

Figure 24. Slido WG08 Question 2

The second WG08 meeting will:

- Build on the initial synergies identified (e.g. converting textile waste into construction materials, paper-fabric blends, remanufactured mattresses) and explore their technical and economic feasibility.
- Address key barriers such as high separation costs, lack of infrastructure, and limited standardisation for textile reuse and recycling.

- Further investigate standardisation opportunities for sorting, quality assurance, and reuse pathways—especially for blended or non-wearable textiles.
- Explore logistics and infrastructure needs, including the potential for regional hubs and tracking systems to improve textile waste handling.
- Integrate broader circularity principles by prioritising reuse and value retention before downcycling, as suggested in plenary discussion.
- Expand stakeholder engagement ahead of the next WG meeting, including industry associations, recyclers, and construction sector actors.
- Prepare clearer recommendations and contribute to the RISERS roadmap and final plenary session in November 2025.

6.3.9 WG 09 – ENERGY DATA & GRIDS

Challenges discussed included fragmented regulation, lack of interoperable systems, and low incentives for flexibility. Recommendations covered cybersecurity standards, certification schemes, and improved stakeholder alignment.

No explicit Slido question is recorded in the slide deck, but the group emphasised data trust, standardisation for decentralised infrastructure, and public engagement.

WG09's next steps include:

- Develop recommendations for interoperable data exchange protocols and standardised formats across industrial and energy systems.
 - Explore standardisation needs for cybersecurity, trust frameworks, and secure energy data governance to support industrial symbiosis.
 - Identify missing certification schemes and standards for grid-connected infrastructure, including flexibility services and decentralised energy assets.
 - Promote alignment of energy data strategies with industrial symbiosis goals, particularly for energy clusters and energy communities.
 - Address regulatory fragmentation across Member States and support harmonisation efforts through targeted standardisation proposals.
- Prepare use cases illustrating the role of digitalisation in enabling energy symbiosis and grid integration of industrial processes.

Consolidate recommendations and contributions for the RISERS roadmap and the final plenary in November 2025, involving both energy and industrial stakeholders.

6.3.10 WG 10 – BIOMASS

The group examined synergies using biomass and organic waste streams for fuels, fertilisers, and bio-based materials. It recommended revising EN standards, supporting CO₂ trade mechanisms, and creating incentives for green hydrogen.

Originally, the title included “& Waste Wood”, which was redacted as it is part of Biomass.

Slido Q1 asked about balancing simplified standards with environmental safeguards, and Q2 ranked financing models for biomethane (e.g. carbon credits, cooperatives).

 [WG10-Q1] Which is the best strategy for balancing the simplification of standards with environmental integrity and market transparency in biomass valorisation?

Multiple choice poll  13 votes  13 participants

A. Establish a multi-stakeholder task force to streamline overlapping standards while embedding environmental safeguards and robust monitoring mechanisms. – 10 votes



77%

B. Suspend detailed regulatory requirements temporarily to encourage rapid biomass valorisation uptake, then reinstate stricter standards once market momentum is achieved.

– 0 votes



0%

C. Rely solely on voluntary certification schemes to ensure transparency and environmental protection while deregulating formal frameworks to speed up market entry.

– 3 votes



23%

slido

Figure 25. Slido WG10 Question 1

 [WG10-Q2] Rank in order of relevance the innovative business models or public-private financing mechanisms in terms of their effectiveness of making biomethane production and injection economically viable at scale

Ranking poll  9 votes  9 participants

1. B. Relying entirely on carbon credit revenues to finance biomethane injection projects, bypassing the need for upfront investment by utilities or municipalities.



2.11

2. A. Shifting production sites to urban centers to minimize transport costs, even if it compromises feedstock availability and grid compatibility.



2

3. C. Launching community-based energy cooperatives with blended finance schemes (EU grants + green bonds) to pool resources for biomethane infrastructure development.



1.89

slido

Figure 26. Slido WG10 Question 2

WG10 will use its second meeting to:

- Refine recommendations for standardising biomass classification, quality criteria, and certification schemes, especially for secondary biomass and waste wood.
- Explore how standards can support cascading use, biogas injection, and bio-based product development (e.g. fuels, fertilisers, construction materials).
- Address complex regulatory frameworks and advocate for clearer, more harmonised end-of-waste criteria at EU level.
- Evaluate innovative business models and financing mechanisms (e.g. carbon credits, cooperative models) to support economic viability.
- Balance simplification of standards with environmental integrity and market transparency by considering multi-stakeholder task forces.
- Coordinate with WG02 (End-of-Waste) and WG01 (IS General) to align regulatory and classification approaches.
- Expand participation in the next WG meeting and prepare a consolidated input for the RISERS roadmap and the November 2025 plenary.

6.4 FEEDBACK ON FURTHER ROADMAP DEVELOPMENT

The plenary session offered initial reflections on how the roadmap should evolve based on the Working Group discussions held earlier. While no formal drafting decisions were taken, several recurring observations can be derived from the discussion.

First, participants stressed the importance of **linking sector-specific insights to overarching barriers and opportunities** in Industrial Symbiosis. Horizontal topics such as End-of-Waste criteria and digitalisation were mentioned multiple times as issues that cut across sectoral boundaries and may benefit from joint treatment. References to synergies between sectors (e.g. batteries and steel, or textiles and packaging) and shared challenges (e.g. quality requirements for secondary raw materials) suggest that the roadmap development process should ensure cross-WG coherence while considering each vertical WG area.

Second, several speakers, including from industry and research, raised the issue of **regulatory fragmentation and uncertainty**, particularly around End-of-Waste definitions and how they vary across Member States. The roadmap was seen as a potential instrument to clarify where harmonised approaches could be supported through standardisation.

Third, **ongoing engagement of stakeholders across Working Groups** will continue to be important. More stakeholders in particularly the vertical WGs are needed and additional ad-hoc meetings should be organised to complement WG discussions. Overall, participants expressed readiness to contribute further, including through additional WG meetings in autumn 2025.

These elements will be taken into account in WP7 to guide the roadmap's structure, prioritisation logic, and stakeholder engagement approach.

7 NEXT STEPS

This chapter outlines how the outcomes of the first consultation round will be taken forward in the RISERS project. It describes the planned use of stakeholder input for roadmap development, the structure of the second round of Working Group meetings, and strategies to maintain continuous engagement with relevant communities.

These next steps aim to ensure that the RISERS roadmap and accompanying recommendations reflect practical needs, benefit from expert validation, and support future standardisation and policy processes

7.1 HOW THE OUTCOMES WILL INFORM PROJECT ACTIVITIES

The discussions and findings of the Interim Plenary Session directly inform the development of the Industrial Symbiosis (IS) Standardisation Roadmap. Insights shared across Working Groups will feed into the structure and prioritisation of future standardisation needs, with emphasis on common barriers, such as regulatory ambiguity (e.g. End-of-Waste criteria), lack of interoperability, and data availability.

The Working Group outcomes also support ongoing technical and policy-relevant activities under WP5 and WP7. The first public version of the roadmap is expected by Q1 of 2026 and will include policy recommendations, standardisation recommendations, and concrete input to be shared with CEN, CENELEC and ISO Technical Bodies. Where feasible, identified standardisation opportunities will be aligned with existing technical work or proposed as new work items. This additional feedback will provide final validation to the RISERS Standardization Roadmap (D7.1), which is expected by the end of the project (December 2026).

7.2 PLANS FOR THE SECOND ROUND OF THE WG CONSULTATIONS

The second round of **stakeholder engagement workshops** (WG consultations), coordinated under **Task 9.6**, is scheduled between **September and October 2025** (see Figure 10). Each WG will be invited to discuss the draft roadmap content, verify whether their earlier inputs are accurately reflected, and prioritise actions for standardisation, policy, or R&I. These workshops will produce a preliminary version of the roadmap for key experts, policy actors, and industrial stakeholders for feedback and validation. This builds on the initial consultations held in **Task 8.6** and the detailed input collected through the RISERS Working Groups in spring 2025.

To address these issues, the following coordination actions are proposed:

- **Use WG01 outputs to anchor horizontal elements** (e.g. definitions);
- **Develop shared templates or checklists** to guide WG04–WG10 in structuring final recommendations;
- **Ensure joint synthesis discussions**, either via combined WG meetings or final WG plenary in November 2025.

These insights from the first WG round lay a foundation for a coherent, interconnected roadmap. They will inform the roadmap drafting process in WP7 and the further stakeholder validation in WP9.

A **Final Plenary Session** will follow on **12 November 2025**, to be held hybrid in **Brussels**, serving as the main validation milestone for the RISERS roadmap. The first complete draft of the roadmap is expected by **Q1 of 2026**, based on structured inputs gathered across both WG rounds and broader stakeholder consultation.

7.3 CONTINUOUS ENGAGEMENT STRATEGIES

The RISERS project follows a structured and participatory approach to ensure that the **Industrial Symbiosis Standardisation Roadmap (D7.1)** and the accompanying **Recommendations and Toolbox for Technical Committees (D7.2)** are co-developed with relevant stakeholder communities and standardisation actors. These deliverables are due by project month 36 and will be informed by continued engagement activities in the second project phase.

To ensure continuity and deepen the reach of engagement activities, the following strategies may be applied:

- **Targeted consultation of CEN and CENELEC Technical Committees**, including visits, briefings or online exchanges with selected TCs. These will help align RISERS outputs with standardisation activities already underway and promote future uptake.
- **Online ad-hoc consultations** with stakeholders (e.g. sectoral associations, policy experts, industrial clusters), especially where sector-specific barriers or sensitive issues require tailored input.
- **Open registration on DIN.ONE**, which remains active to allow new participants to join Working Groups. This is particularly important for addressing representation gaps in under-represented sectors, such as **textiles** and **plastics**.
- **Outreach to strategic communities**, including **Hubs4Circularity** and other Horizon Europe projects, to situate RISERS outcomes within broader developments in the circular economy and green industrial transition.
- **Dedicated workshops** for the **Recommendations and Toolbox for Technical Committees (T7.2)**, which will present practical guidance for standards drafters and may inform a future CEN-CENELEC Guide.

Together, these activities ensure a **transparent and participatory process** that enables continuous feedback, iterative improvement, and stakeholder ownership of the final outputs. The roadmap and toolbox will not only reflect technical priorities, but also practical implementation needs and policy coherence.

8 [CONCLUSION](#)

The first round of RISERS WG Meetings (or stakeholder workshops) demonstrated the value of inclusive, cross-sector dialogue in shaping the standardisation agenda for industrial symbiosis. The active engagement of 94 experts from diverse backgrounds has provided a foundation for the roadmap's development. While challenges such as legal fragmentation, digital interoperability, and uneven sectoral participation remain, the process has identified clear priorities and actionable paths forward. The project will build on these findings in the second consultation round and through targeted stakeholder engagement, ensuring that the final roadmap and technical recommendations are both relevant and implementable across Europe's industrial landscape.

9 [ANNEXES](#)

- Annex 1.a - ToR for the Working Groups
- Annex 1.b - WG Concept Note
- Annex 1.c - IP declaration