



# Practitioner-Centred Standardisation for Industrial Symbiosis: Insights from the RISERS Survey

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## Context and Methodology

### Industrial Symbiosis and the Role of Standards

Industrial Symbiosis (IS) refers to the collaboration between different sectors to exchange resources such as materials, energy, and by-products. By doing so, IS helps reduce environmental impact and contributes to the circular economy. Despite well-known success stories, IS remains underdeveloped in many parts of Europe due to structural, regulatory, and standardisation-related barriers. Standardisation plays a key role in addressing these challenges. It can provide clear definitions, lower transaction costs, support compliance, and enable trust. However, IS-relevant standards are currently fragmented, poorly aligned across sectors, and not always informed by practical needs.

### What is RISERS?

RISERS (2024–2026) is a Horizon Europe Coordination and Support Action developing a standardisation roadmap for Industrial Symbiosis. It builds on extensive stakeholder input across ten Working Groups, with a strong focus on practitioners, researchers, and technical bodies.

### About the Survey

This poster presents results from the RISERS Standardisation Expert and Practitioner Survey, conducted in 2024 as a baseline for roadmap development. It aimed to identify standardisation gaps and opportunities to scale IS practices.

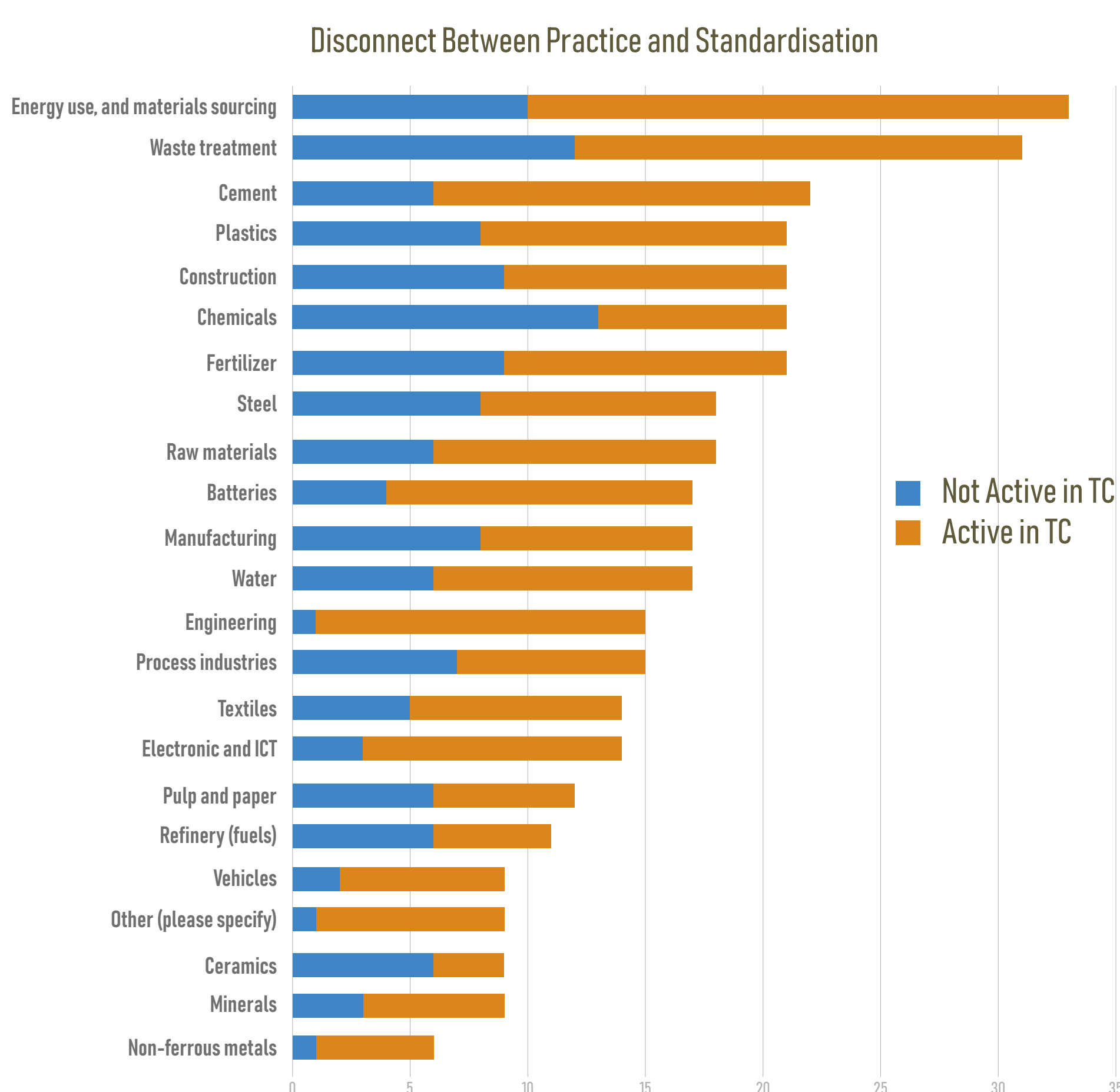
- **Respondents:** 93 started, 67 completed
- **Audience:** Experts from TCs, industry, research, policy, NGOs
- **Format:** 32 questions (quantitative and qualitative)
- **Geography:** Primarily Central and Western Europe

Survey outreach targeted over 350 relevant Technical Committees across CEN, CENELEC, DIN, and ISO.

## Key Findings

### High Awareness, Uneven Involvement

Respondents showed strong awareness of IS practices. Common examples included waste heat reuse, biogas production, and steel slag recycling. However, engagement in standardisation remains limited across many active IS sectors.



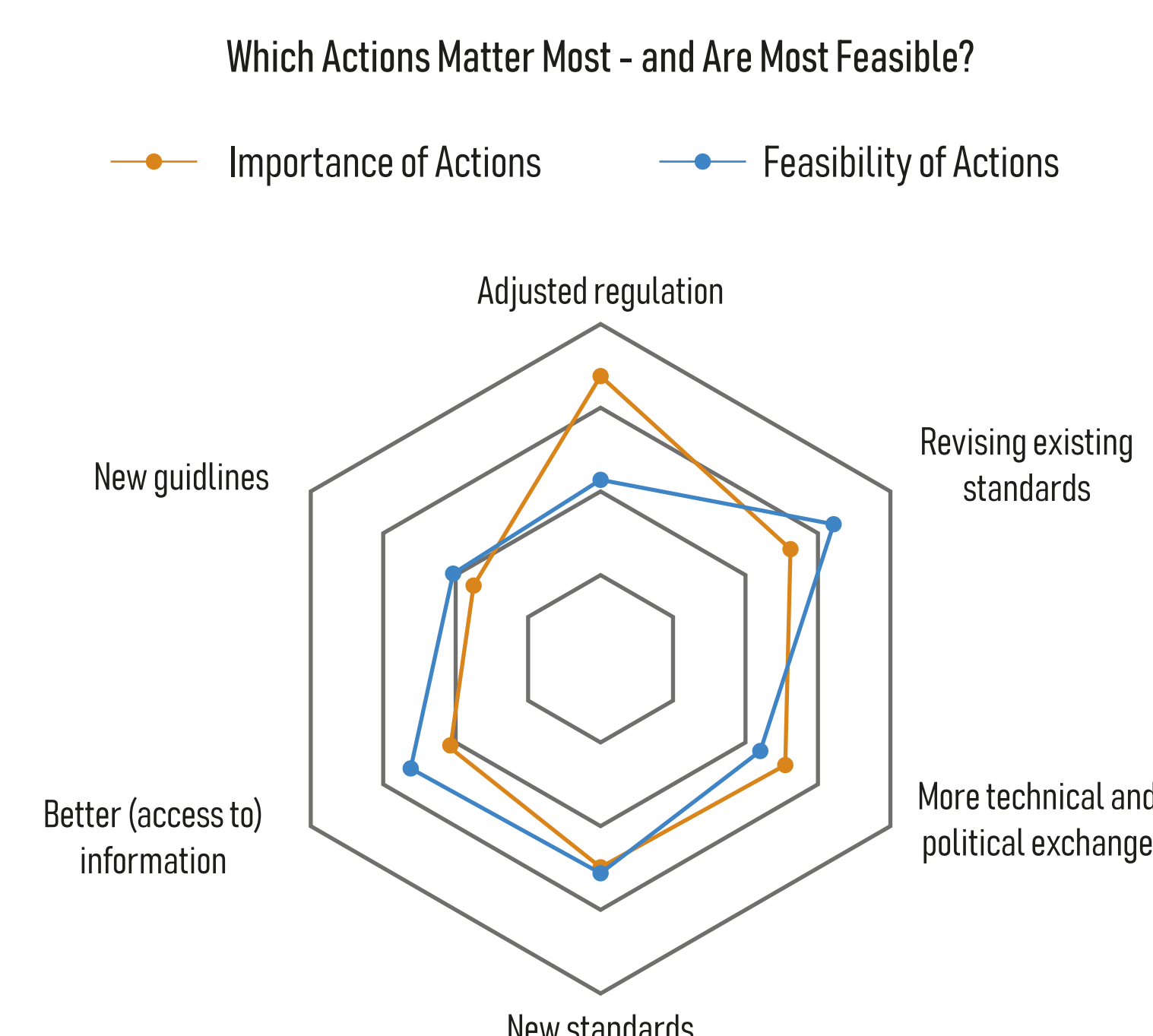
Key IS sectors like energy, waste treatment, and construction show high awareness but low standardisation involvement, suggesting a gap between practice and governance.

### Main Barriers

Survey participants identified several critical barriers:

- **Regulatory complexity**, especially definitions of waste and by-products
- **Lack of harmonised end-of-waste criteria**
- **Limited integration of R&I outcomes into standardisation**
- **Siloed Technical Committees and constrained cross-sector alignment**

Practitioners from industry and SMEs sometimes find standardisation inaccessible or disconnected from operational reality.



Regulatory change is seen as most important but least feasible. Updating existing standards and improving access to information offer more realistic short-term gains.

## Recommendations

### Research Actions

To close knowledge gaps and better inform policy and standardisation:

- Study how inconsistent permitting and definitions hinder IS across Member States
- Launch sector-specific pilot projects to test IS standards in practice
- Map needs in high-potential sectors such as construction, chemicals, and manufacturing

### Standardisation Actions

To improve coordination and ensure standards meet cross-sector needs:

- Strengthen CEN and CENELEC Coordination Groups (COGs) and explore dedicated IS Working Groups
- Update key standards (e.g. EN 15804, ISO 59000, CWA 17354:2018)
- Create mechanisms for systematic uptake of R&I outcomes (e.g. liaisons, matchmaking, PSIS)

### Education and Capacity Building

To empower practitioners and align standardisation with field realities:

- Train TC members and practitioners on IS-relevant standards
- Integrate IS into vocational and university curricula
- Facilitate policy-practitioner-standardisation exchange formats (e.g. networks, communities of practice)

Research	Standardisation	Education & Capacity
Assess regulatory barriers	Revise existing IS-relevant standards	Train TC members and IS practitioners
Launch IS pilot projects	Improve mechanisms for R&I interactions	Embed IS in university/industry training
Analyse sector-specific needs	Expand cross-sector TC coordination	Promote inclusive knowledge exchange

### What Technical Committees Need

When asked what would help TCs improve IS support, respondents prioritised:

What TCs need most to improve IS:

- 🔍 Regulatory support (ranked highest)
- 👥 More experts & funding
- 📊 Evidence base: studies & reports

## Takeaway

To scale Industrial Symbiosis in Europe, standardisation must become more inclusive, cross-sectoral, and responsive to practitioners. Survey insights confirm the need for regulatory clarity, better coordination, and more direct pathways from research to standards.

RISERS addresses these challenges when framing the IS standardisation process by capitalising on existing standardisation efforts, analysis of existing knowledge provided by European projects and a collaborative stakeholders approach.

### Consortium

