

IETS Task XXI

**Facilitating Industrial Symbiosis -
EU Collaborations and Insights from IEA IETS Task 21**

**Marie Karlberg, RISE
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IETS Task XXI

Net-zero industrial processes in a circular economy framework

Task Members

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- Canada
- Finland
- Germany
- Italy
- Netherlands
- Norway
- Portugal
- Sweden

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Definition phase
Year 2020

IETS Task 21 Definition phase

Attract much interest



Phase 1
Feb 2021 – Jun 2022

IETS Task 21 - Subtask 1 Circular Carbon & Industrial Symbiosis

- Definition and metrics
- Integrative Modelling
- Industrial carbon technologies and systems
- Industrial Symbiosis
- Networking with other IEA TCPs and IETS Tasks

*Dozens of „participants“
Broad spectrum of ideas*

*→ be more concrete
in #2 and #3*



Phase 2
Jul 2022 – Dec 2024

IETS Task 21 – Subtask 2 Circular Carbon

- How to handle circular carbon in modelling (LCA)
- Integration of carbon capture in industry
- Networking

IETS Task 21 – Subtask 3 Industrial Symbiosis

- Definition and delimitation
- Good practice examples
- Business Models
- Networking



Proposal Phase 3
Jan 2025 – Dec 2027

IETS Task 21 – Subtask 4 Carbon Dioxide Capture in Industry

- Comparison of national perspectives on CCUS: CO2 management strategies and legal provisions
- CCU Value Chains and Stakeholder Database
- Integration of carbon dioxide capture in industry
- Networking

IETS Task 21 – Subtask 5 Facilitation of Industrial Symbiosis

- Portfolio of Industrial Symbiosis Facilitation tools
- Broadening the perspectives on Implementing technologies for Industrial Symbiosis
- Networking



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Phase 3

Subtask 4: Carbon Dioxide Capture in Industry

Comparison of national perspectives on CCUS (Led by EI-JKU)

- CO₂ management strategies
- National legal provisions

CCU Value Chains and Stakeholder Database (Led by EI-JKU)

Integration of carbon dioxide capture in industry

- CC trade-offs (purity, quality, energy)
- Real-life challenges of CC in industry

Networking

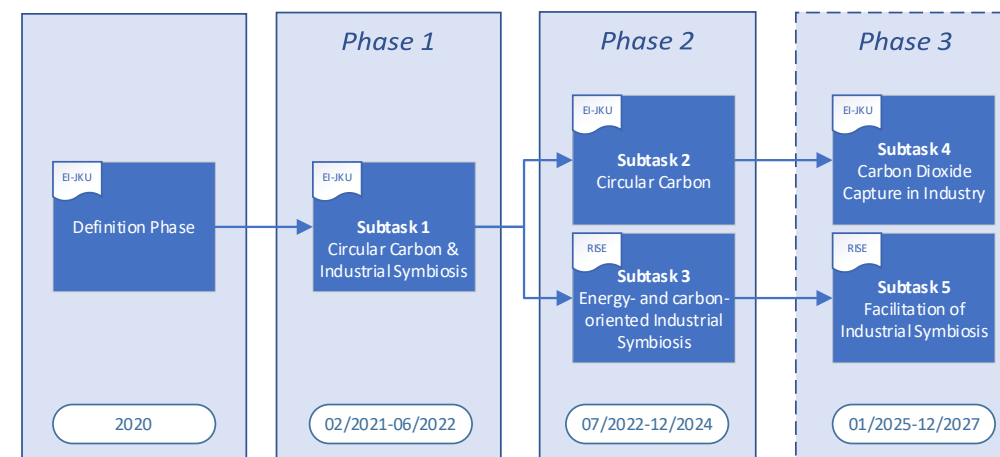
Subtask 5: Facilitation of Industrial Symbiosis

Portfolio of Industrial Symbiosis Facilitation tools (Led by SDU)

Broadening the perspectives on Implementing technologies for IS (Led by RISE)

Networking

IETS Task XXI: Net-zero industrial processes in a circular economy framework



IETS Task XXI

Networking with other IETS Tasks & other TCPs' Tasks (Q1/2025 – Q4/2027)

Leverage synergies with other IETS Tasks and other TCPs' Tasks, such as IETS Task XI ETSAP TCP, IEAGHG TCP, IEA Hydrogen, and IEA Bioenergy TCP

Swedish network – Subtask 4 & 5

Coordination of a Swedish consortium for knowledge exchange within CCUS and facilitation of industrial symbiosis between academia, industry, and symbiosis networks in Sweden.

Founded by the Swedish Energy Agency.

IETS Task XXI – Subtask 5

RISE Activity

Industrial Symbiosis Readiness Level Matrix Development

The ISRL matrix is designed to evaluate industrial symbiosis networks and facilitate stakeholder discussions on potential development paths.

Collaboration and Feedback

Development incorporates input from task partners, workshops, and interviews with stakeholders in IS networks.



Figure 1. ISRL-Matrix for assessing an IS network. The ISRL-Matrix presented here is a conceptual representation, i.e., information in the cells for each readiness level has been omitted.

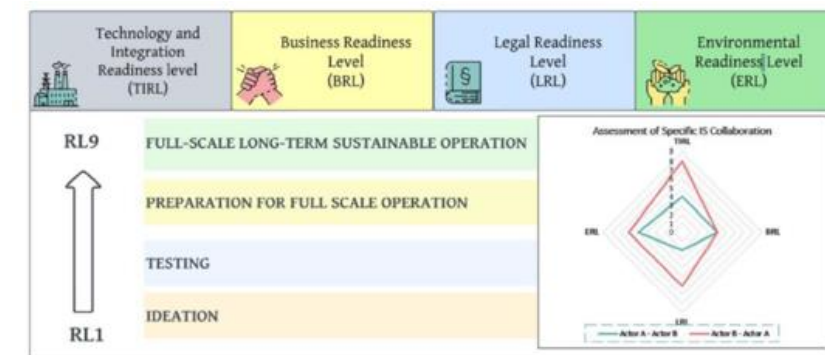


Figure 2. ISRL-Matrix for assessing a specific collaboration within an IS network. The ISRL-Matrix presented here is a conceptual representation, i.e., information in the cells for each readiness level has been omitted.

IETS Task XXI – Subtask 5

RISE Next steps

International workshop on Industrial Symbiosis Readiness

(Dec 9th, 2 PM CET, online)

- Collaboration on developing the Industrial Symbiosis Readiness Level Matrix

Swedish workshop on Industrial Symbiosis readiness & CCUS in industry

(Prel. January 27th, online)

- Knowledge exchange on CCUS in Industry in Sweden
- Collaboration on developing the Industrial Symbiosis Readiness Level Matrix