



Open Innovation Workshop

Brussels, Belgium

31 May 2022

CircLean Open
Innovation Workshop
Brussels, Belgium - 31 May 2022

The online workshop was held on 31 May 2022 and was co-organised by the CircLean team, VITO and OVAM. The event served as an opportunity to share experiences and knowledge regarding industrial symbiosis (IS) transactions in Belgium and to exchange views with the European Commission regarding the uptake of IS in the EU.

Highlights

EU Strategic Landscape and CircLean Benefits

- The **European Green Deal** and the **EU Industrial Strategy** have emphasised the potential of industrial symbiosis (IS) as an innovative business model. One of the EU objectives on IS to be pursued through the CircLean project concerns the development of a European industry-led monitoring and reporting system for IS transactions.
- IS brings **twofold benefits** in terms of environmental protection and climate mitigation (decreased use of primary materials; decreased landfilling; reduction of GHG emissions; reduction of energy use, etc.) but also in terms of competitiveness and industrial innovation (decreased costs for primary raw materials; fostering innovation and R&D; improved sustainability image of the companies).
- **CircLean** is a network of businesses and SMEs for IS. The purpose is to set up a network of businesses to seize IS business opportunities. CircLean is suitable for industry actors; business associations; public authorities; and R&I stakeholders. CircLean is EU-wide, flexible, industry-led, sustainable, voluntary, and needs-centred.

CircLean Toolbox

- The CircLean Toolbox comprises a **Self-assessment module** and a **Matching tool**. The **Self-assessment module** prepares businesses for engaging in industrial symbiosis, with a three-stage assessment process of their site, resources, and potential match opportunities. The user is guided through identifying waste streams and other under-utilised resources that can be repurposed by companies in different sectors, and how to gather evidence and data for these resources. Ideas are presented to help the user identify substitutes for inputs leading to a diversified and more robust supply chain. More information on the Self-assessment module is available [here](#). Companies that feel confident in these areas can move straight to the online **Matching tool**, which will offer them the opportunity to enter into regional or cross-border IS transactions.

Hubs4Circularity

- IS has the potential to bring a wide range of benefits to regions such as boosting economic growth, investments in innovation, cost-saving across industrial processes, etc. This is demonstrated by **Hub4Circularity** which are self-sustaining economic industrial ecosystems for full-scale Industrial-Urban Symbiosis (I-US) and Circular Economy, closing energy, resource and data loops. At a regional level Hub4Circularity has the potential to foster industry-society collaboration necessary to achieve a leap forward towards circularity and carbon neutrality. The H4Cs concept builds on the local contexts connecting various regional stakeholders (industry, SMEs, local authorities, educational institutions and civil society). The H4Cs are a key element of the [Processes4Planet Partnership Strategic Research and Innovation Agenda 2050](#) under [Horizon Europe](#).

Local IS initiatives and projects

- There are numerous inspiring examples of local industrial initiatives and projects in Belgium taking place across different sectors. One of these is the **Ecluse project** which is about maximizing the energy valorization from the waste treatment facility delivering [process steam and heat to industrial companies in a port area](#). [The project demonstrates how waste-to-energy is integrated in society and in the urban system bringing environmental, economic and social benefits](#). The experience of an **IS project in the port of Antwerp** showcases how IS can be a solution for more sustainable production of industrial water from recycled and brackish (dock)water. Creating a strong industrial partnership was also key for this IS project between industrial water producer, suppliers of re-use water and offtakers of produced industrial

water.

The experience of POM West Flanders demonstrates a comprehensive approach in fostering the cooperation between companies for improving materials and waste management.

Hindering factors for IS development

- Key barriers that industries are facing with regards their engagement in IS include investment costs, regulatory gaps, technological barriers and outdated infrastructure as well as lack of knowledge of resources and waste streams generated by others. Other hindering factors relate to the insufficient capabilities and willingness of companies for collaboration as well as insufficient knowledge exchange among companies.
- Regulatory uncertainty related to the status of secondary materials (waste versus product) has been one of the major issues discouraging companies from engaging in IS endeavours. Therefore, there is a need to harmonise interpretation of waste regulation and the application of the concepts of By-Product and 'End of Waste' across Member States. 'End of Waste' (EoW) criteria specify when a given waste ceases to be considered waste and obtains the status of a secondary raw material.
- Permitting is problematic as in the absence of clear EoW criteria companies do not have the certainty that they would receive a permit for exchanging wastes.
- There are already lots of initiatives, platforms and projects on IS, but in many cases the opportunities for cooperation and synergies between them remain unexplored.

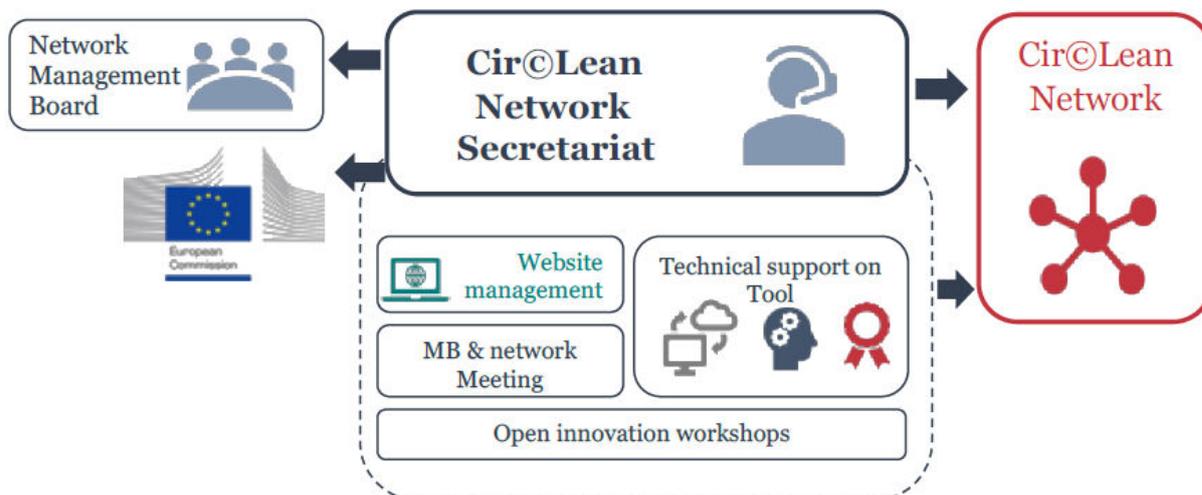
Success factors and enablers for stimulating IS

- The role of facilitation in addressing barriers to IS is crucial. There are already positive steps and examples in Belgium in this area, such as the **smart industrial approach in Flanders** with its key elements including the online symbiosis platform, dedicated team and technical assistance provided to companies. Planned matchmaking workshops in focal sectors, upgrading the functionality and data integration with other platforms are also important steps for its future development.
- The support for IS provided to companies in Belgium at different levels need to continue. In particular, companies have the opportunity to benefit from training on IS offered by various initiatives such as Circular Wallonia and get support for innovation through the calls for proposals launched at regional level. It is also important that companies have the possibility to participate and apply jointly in these calls.
- Developing IS is a complex process which depends on building **the right partnership**, i.e. bringing the right partners and expertise on board, as well as efficient management of various stakeholders participating in IS as showcased by the experience of the ECLUSE steam network. Building strong industrial partnership was also key for the symbiosis project in the port of Antwerp between industrial water producer, suppliers of re-use water and oftakers of produced industrial water.
- The question of building trust in IS is crucial for creating IS synergies and can be addressed by adopting an inclusive approach, promoting open data as well as an open-minded communication.
- Several **economic and regulatory instruments** can drive IS indirectly, through favouring higher and penalising lower waste hierarchy options. Examples include relatively high landfill and incineration taxes, local landfill bans of various waste streams (e.g. biowaste), and targeted economic incentives. When low prices of primary raw materials compared to secondary materials deter further use of secondary materials, incentives for the use of secondary materials can be introduced. This can be done through economic instruments (e.g. the price of the secondary raw materials could be subsidised and should become lower than the primary ones), but also through regulatory instruments such as design standards that set minimum requirements for use of secondary materials.
- There is a need to **harmonise interpretation of waste regulation and the application of the concepts of By-Product and 'End of Waste'** across Member States. 'End of Waste' criteria specify

when certain waste ceases to be considered waste and obtains the status of a product (or a secondary raw material).

- To **foster the participation of SMEs** in IS it is important to raise awareness their awareness on the potential benefits such as increased competitiveness, productivity and resource efficiency, enhanced innovation capacity and knowledge about alternative business models. Environmental and social benefits to be emphasized as well. The targeted support provided by POM Limburg is a good example in this regard. Innovation support organisations at regional level have also the potential to offer competence exchange and technological advice to build an industrial symbiosis network.

CircLean Governance



How to join CircLean in 3 easy steps

Step 1: Express your interest by sending a **signed Letter of Intent** to the CircLean Secretariat at circlean.project@technopolis-group.com

Step 2: Fill in the **Membership Application Form** including information on industrial symbiosis activities; experience with industrial symbiosis, etc. There is a basic and an active membership.

Basic membership

- Contribute to the development of the CircLean resource tool with their details and availability for matchmaking
- Contribute to the overall progress of the network
- Register details and resources in the CircLean tool and agree to contribute to the "Network" of resources shared online
- Active involvement in the more-advanced network activities (e.g. network meetings) is not compulsory

Active membership

- Register details and resources in the CircLean tool and contribute to the "Network" of resources shared online
- Involvement in the Management Board and in specific network meetings playing a more prominent role in the activities organised to develop the network, establish it as a sustainable hub for industrial symbiosis in the EU, and expand its membership base.

Step 3: Sign the **Network Charter/Code of Conduct** which includes mutual respect, integrity-based relationships among members, etc. More information is available [here](#).

Frequently Asked Questions (FAQ)

- ✓ **What will happen to the CircLean network after the end of the funded coming from the European Commission in November 2022?**

The CircLean network was designed with the ambition to become self-sustainable after the three years of EU funding. There are ongoing discussions with the members of the network that will be intensified in the coming months regarding this aspect, as the continuation of the network depends on the engagement of its members. The European Commission and the consortium implementing the CircLean project are supporting this process. The CircLean website and toolbox will remain online for one year after project end.

- ✓ **What are the benefits for my company/organisation in joining the CircLean network?**

Getting free access to an EU endorsed industry-led community of peers equipped with robust tools to discover, engage in, monitor and report about industrial symbiosis transactions across the EU, i.e. a self-assessment module, a matching tool to identify suitable opportunities for IS transactions, a common reporting methodology, and a EU label.

Opportunity to share views and suggestions for the Commission to increase the uptake of industrial symbiosis in the EU.

- ✓ **What are the benefits for my company/organisation to engage in industrial symbiosis?**

Reducing cost: Decreasing costs associated with inputs to production and waste disposal improves profitability and competitiveness.

Fostering innovation: Industrial symbiosis produces a demand-pull on innovation as industry identifies novel uses for underutilised resources. The OECD and UNEP identify industrial symbiosis as supporting eco-innovation.

Increasing revenue and competitiveness through diversification: Creating new business opportunities to sell what used to be a 'waste', thus converting the cost of waste management and disposal into a revenue opportunity.

Mitigating resource risk: Finding alternatives to traditional inputs, often outside the usual sector boundaries, decreases reliance on critical materials.

Creating jobs and encouraging entrepreneurs and new business start-ups.

Reducing emissions and contributing to climate neutrality targets.

- ✓ **To what do I commit by agreeing to become a member of the CircLean network?**

CircLean is a voluntary network and by joining it you only commit to respecting the CircLean Charter/Code of Conduct. Your active participation and contribution will be appreciated. Membership is free of charges.

- ✓ **Will I have any benefit if I follow the CircLean voluntary reporting methodology? When will it be developed?**

The protocol for the voluntary reporting methodology is ready. The main benefit associated to its implementation is the award of the EU CircLean label. The label will not only help businesses to participate in communicating their sustainability efforts, but will also signal that they are trustworthy partners to other operators.

- ✓ **Who holds the copyright of the Self-assessment module and the Online matching tool?**

The European Commission holds those rights.



Other resources on IS

- [European Resource Efficiency Knowledge Centre](#)
- EC, [Cooperation fostering industrial symbiosis: market potential, good practice and policy actions, 2018](#)
- [Industrial Symbiosis in the Baltic Sea Region, Nordregio Policy Brief](#)
- [FISSAC Project](#)
- [Guidelines on how to capitalise GPP as an enabler of industrial symbiosis](#), SYMBI project
- Interreg Europe Policy Learning Platform, [Policy brief on industrial symbiosis](#)
- Interreg Europe Policy Learning Platform, [Policy brief on circular economy business models](#)
- Interreg Europe Policy Learning Platform's [webinar](#) on circular economy business models

Agenda from the event

Time	Sessions	Additional details	Speaker
9:00–9:05	Introduction	<i>Presentation of the agenda</i>	Luigi lo Piparo, Technopolis Group
9:05- 9:20	Speech from the representative of the European Commission about the ambition underpinning CircLean		Anestis Filopoulos, European Commission
9:20-9:35	Introductory presentation on Industrial Symbiosis	<i>A presentation introducing the concept of Industrial Symbiosis as well as the benefits it can bring to the industry</i>	Ludo Diels, VITO
9:35-9:50	The CircLean network, how to join it and why	<i>A presentation introducing the CircLean project, how to join the CircLean network, and the opportunities offered to CircLean members. The participants will be able to ask questions</i>	Luigi Lo Piparo, Technopolis Group
9:50-10:10	Presentation of the CircLean toolbox (i.e., Self-assessment module and Matching tool)	<i>The CircLean team will present the Self-assessment module and matching tool. The participants will be able to ask questions.</i>	Rachel Lombardi, International Synergies
10:10-10:30	Smart Industrial Approach of the region of Flanders	<i>Brief overview of the IS approach in the region of Flanders</i>	Gust Michiels, OVAM
10:30-11:00	Examples of local industrial symbiosis initiatives and projects – Part I	<i>Good examples of local industrial symbiosis initiatives and projects will be presented.</i> 1. Ecluse: a channel for green energy. 2. Reliable and Sustainable production of industrial water from recycled & brackish (dock)water - A Symbiosis project in the port of Antwerp.	1. Francis De Schepper, Director Sales IWS Belgium (INDAVER) 2. Willy Gils, Vice-President Avaio – Dockwater.
11:15-11:45	Coffee break		
11:15-11:35	Examples of local industrial symbiosis initiatives and projects – Part II	3. A comprehensive approach to improve materials and waste management through cooperation of companies in West-Flanders. 4. Q&A session.	3. Guido de Roo, Project Manager at POM West- Vlaanderen

11:35-12:25	Roundtable about the opportunities and challenges for the uptake of industrial symbiosis	<i>The roundtable will discuss the opportunities and challenges for the uptake of industrial symbiosis.</i>	Speakers: <ul style="list-style-type: none"> • Àngels Orduña, Executive Director of A. SPIRE • Jorg Roosen, Project manager Energy, Circular Economy and Constructio, POM Limburg • Dr. Laurence Lamm, Senior Advisor at EIT Raw Materials • Yannick Vesters, Project manager Circular Economy & Climate resilience at Ecores
12:25-12:40	Presentation of the communication toolbox for CircLean Ambassadors	<i>A presentation of the communication toolbox for CircLean that can be used by CircLean members and other industrial symbiosis stakeholders.</i>	Anya Gregory, Arctik
12.40-13:00	Wrap up and conclusions	<i>Takeaways messages and next steps</i>	Luigi Lo Piparo, Technopolis Group
	Lunch & networking End of the day		

