



Input paper for the "IS Reporting and Certification Systems" Workshop



SYMBI
COVID-19 call

**Chamber of
Commerce of Molise**

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Executive summary

This input paper provides the thematic background and guidelines for the implementation of Activity 6 of the SYMBI COVID-19 call project, namely “Interregional workshop on industrial symbiosis (IS) reporting and certification systems”. It serves as the primary source of knowledge for the capacity building and interregional learning processes of the thematic workshop.

During the activity, partners will join the workshop organised by the Chamber of Commerce of Molise (CoC Molise), to discuss and work together on how to integrate IS reporting and certification systems in resilience policy planning.

To that end, the input paper includes the context the SYMBI COVID-19 call project (Section 2), an overview of the Activity (Section 3), the thematic background on IS reporting and certification systems to stimulate discussion (Section 4), case studies (Section 5), and the suggested topics for discussion (Section 6). Organisational guidelines regarding practical aspects of the workshop, a tentative agenda, and guidelines for drafting a summary report encapsulating the lessons learnt are found in Section 7.

1 Introduction

1.1 The SYMBI COVID-19 call extension for additional activities





The SYMBI COVID-19 call project brings together 9 partners from 7 countries to work for the proliferation of Industrial Symbiosis (IS) and align territorial policies with the circular economy package of the European Commission (EC). COVID-19 has revealed vulnerabilities in current policies and practices, that is to say insufficiencies in maintaining and emphasising sustainability priorities during times of crisis. In the course of the two-semester COVID-19 call extension of the SYMBI project, partners will map the impact of the pandemic on territorial supply chains and the challenges faced in applying circular economy and IS approaches. Partners will also increase their crisis management capacities by identifying promising recovery and resilience pathways.

This is the last of the three interregional workshops, in the context of which partners will build capacities on how to foster the application of reporting & certification systems. The previous two focused on how to a) promote increased adoption of IS in SYMBI territories through digital solutions and, b) establish financial opportunities for IS deployment through the new Circular Economy Action Plan (CEAP)¹ & EU Green Deal.





1.2 SYMBI extension project partners

The SYMBI partnership currently comprises 9 partners from Spain, Poland, Italy, Slovenia, Greece, Hungary, and Finland (see table 1).

Table 1: SYMBI partners

Country	Partner
	Foundation FUNDECYT Scientific and Technological Park of Extremadura (FUNDECYT)
	The Malopolska Region (MALOPOLSKA)
	Chamber of Commerce of Molise (CoC – Molise)
	Government Office for Development and European Cohesion Policy (SVRK)

¹ https://environment.ec.europa.eu/strategy/circular-economy-action-plan_en

Country	Partner
	Regional Development Agency of the Ljubljana Urban Region (RRA-LUR)
	Municipality of Kozani, Development and Planning Bureau (KOZANI)
	Pannon Novum West-Transdanubian Regional Innovation Non-Profit Ltd (PA-NOV)
	Regional Council of Häme (HAME)
	Häme University of Applied Sciences Ltd (HAMK)

1.3 Workshop's scope and objectives

This deliverable is part of activity A6 of the SYMBI Interreg Europe project, which is titled “Industrial Symbiosis reporting and certification systems” and foresees the organisation of a 1-day on-site workshop by CoC Molise. During the workshop, partners’ representatives will have the opportunity to exchange views and ideas with their peers about reporting and certification systems, familiarise themselves with systems already implemented in Industrial Symbiosis (IS) or any similar context, and co-shape a common approach to integrate these systems in the implementation of their policies and practices.

1.4 Partners’ involvement

The Chamber of Commerce of Molise will chair and organize the A6 interregional workshop, and draft the summary report after its completion. All partners are expected to participate in the workshop and contribute with their own experiences and expertise. At the same time, they are expected to benefit from the suggestions on how to integrate and promote the adoption of industrial symbiosis reporting and certification systems in resilience policy planning, considering the upcoming (within 2022) CEAP’s industry-led reporting and certification system developed by the European Commission.

The A6 workshop will take place on the 29th of September 2022 in Molise.

2 IS Reporting and Certification Systems

2.1 Industrial Symbiosis in the EU policy landscape

Industrial symbiosis (IS) is an important component in the transition to circularity and industry competitiveness in Europe, and the European Green Deal sets up the framework to make IS a business-as-usual approach². As regional and local initiatives are already in motion, attracting companies and SMEs to contribute to advancing local growth and competitiveness, on-going revisions of legislations at EU level are being drafted, covering the whole value chain.

Secondary raw materials and by-products are quickly becoming a viable alternative to the use of virgin raw materials within IS. According to the industry-led *CEN Workshop Agreement³ (2018)*, the term “industrial symbiosis” is defined as “the use by one company or sector of underutilised resources broadly defined (including waste, by-products, residues, energy, water, logistics, capacity, expertise, equipment, and materials) from another, with the result of keeping resources in productive use for longer”. IS has proven successful not only in diverting waste from landfill or incineration, but also in closing the resources loop and moving waste up the value chain.

At EU level, IS continues to be acknowledged in a wide range of Directives, Regulations and Strategies, such as the EU Waste Framework Directive, the Resource Efficient Europe Flagship Initiative under the Europe 2020 Strategy, the Circular Economy Action Plan (CEAP), and more recently under the European Green Deal, the new CEAP 2020, and the 2020 New Industrial Strategy for Europe, aiming at providing a systemic transformation in policy as well as technology, production systems, finance, business models, skills, and citizen behaviour.

To foster the uptake of IS it is important to overcome barriers such as the lack of a harmonised regulatory framework at EU level, limited awareness and knowledge about the potential of IS, low focus on skills and capacity building, lack of standardisation, differences in qualities and standards of exchanged waste between countries all leading to substandard IS network performance.

2.2 EC Initiatives on IS Reporting

Industrial symbiosis delivers many environmental, economic, and social benefits. Nevertheless, the lack of common standards to measure and report on industrial symbiosis

² <https://circlean-symbiosis.eu/new/industrial-symbiosis-in-the-eu-policy-landscape/>

³ <https://boss.cen.eu/developingdeliverables/cwa/pages/>

transactions hinders IS's uptake in the EU; in turn, this lack of evidence on the gains from industrial symbiosis discourages businesses in initiating industrial symbiosis activities.

CircLean⁴ is an initiative that will develop and roll out a EU-wide voluntary common reporting system on the performance of IS transactions. The methodology has been co-developed by the members of the CircLean network to ensure it accurately reflects end-users' (businesses') needs. Starting from the existing NISP[®] reporting methodology, CircLean will consult and adapt to align it with the network requirements. Network members, together with DG GROW, decide which indicators will be reported on the basis of interest from their companies. The methodology intends to demonstrate the link between the direct results from industrial symbiosis transactions regarding the economic and environmental impacts. It will provide European businesses with the tools to follow up and report on disposals, raw materials, and water and energy or greenhouse gas emissions. The objective is to encourage businesses to keep resources in the production loop for longer by:

- a) promoting awareness of the market potential of industrial symbiosis,
- b) demonstrating the economic, environmental, and societal benefits of industrial symbiosis, and
- c) strengthening the links with the corporate social responsibility of companies.

The CircLean reporting methodology will also harmonise information on industrial symbiosis and establish a reliable evidence base at EU-level. It will detail how the results and impacts of industrial symbiosis transactions can be linked up with existing databases in Eurostat. It will also be crystallised into a [CEN Workshop Agreement \(CWA\)](#), elaborated along proven consensus-building procedures, to reach a European consensus on IS reporting methodology.

Furthermore, within the new Circular Economy Action Plan (2020), the Commission aiming to enable greater circularity in industry by launching an industry-led industrial symbiosis reporting and certification system in 2022.

2.3 Sustainability Reporting Process as a basis for IS reporting

Sustainability Reporting represents a potential mechanism to generate data and measure progress and the contribution of organisations towards sustainable development objectives⁵ as it can help them measure their performance in all dimensions of sustainable development, set goals, and support the transition towards a low carbon, resource efficient, and inclusive green and circular economy. It is a cycle to promote continuous improvement, based on performance management. As organisations across the world increasingly embrace sustainability reporting, a number of standards have emerged that enable a wide range of stakeholders to more effectively assess and compare sustainability reports. However, the

⁴ <https://circlean-symbiosis.eu/reporting-methodology/>

⁵ <https://www.undp.org/sustainable-development-goals>

organizations that are known for reporting frameworks and standards each provide their own approach to the reporting of sustainable value creation and disclosure of climate-related risks, which makes deciding what reporting-related certification to pursue incredibly difficult.

Five of the leading reporting groups (**CDP** Climate Change Survey Certification, **CDSB** Climate Disclosure Standards Board, **GRI** Global Reporting Initiative Professional Certification, **IIRC** Integrated Reporting (IR) Fundamentals of Integrated Reporting Certificate International Integrated Reporting Council and **SASB** Sustainability Accounting Standards Board Fundamentals of Sustainability Accounting Credential) recently issued a statement of intent to work together to create a comprehensive global corporate reporting system and IIRC and SASB already merged to become the Value Reporting Foundation⁶. Another widely adopted framework is the Global Reporting Initiative Standards⁷. It is related to other forms of non-financial reporting, including triple bottom line reporting, and corporate social responsibility (CSR) reporting. “Triple bottom line” reporting, meaning that it takes into account not only the financial bottom line of a company but also the environmental and social “bottom lines” for a company.

Through sustainability reporting, IS companies can communicate their performance and impacts on sustainability topics, spanning environmental, social and governance parameters. It enables IS companies to be more transparent about the risks and opportunities they face, to assess sustainability performance with respect to laws, norms, codes, performance standards and voluntary initiatives, to avoid publicized environmental failures and ensure transparency in the waste exchange process and quality of the secondary materials. Additionally, reporting benefits the organisation by mitigating negative environmental issues and improving green and circular reputation.

Sustainability reporting is for the most part a voluntary activity with two main goals: the documentation and assessment of an organisation’s environmental and social impact and the communication of the organisation’s sustainability efforts and progress to stakeholders. The steps to achieve the aforementioned goals are to: a) define performance goals and metrics, b) measure performance (data collection), and c) evaluate and manage performance.

a) Define Performance Goals and Metrics

The first step is to define the sustainability goals of the organisation in a pragmatic and appropriately focused level, yet broad and comprehensive. The organisation should have an overall vision of why it wants to integrate sustainability efforts into its business operations. Is the goal to “change the world”? Or is it more simply to document the organisation’s progress on environmental and social impacts? Is it to convince the partners or customers that the secondary raw material is according to standards?

⁶ <https://www.valuereportingfoundation.org/>

⁷ <https://www.globalreporting.org/how-to-use-the-gri-standards/get-started-with-reporting/>

The next step is to develop key performance indicators (KPIs) that will be used to measure progress toward those goals. A key performance indicator is a performance measure from operational data that is used by organizations to track a particular activity. There are different methods for establishing KPIs, but one typical method is the SMART criteria. In SMART, a measure has a specific business purpose and is measurable, achievable, and relevant to the success of the organization and can be measured over a specific period of time.

b) Measure Performance

Once KPIs are established and business processes are modified to allow for the necessary data to be captured and recorded, the process of measurement begins. Wastes from one factory could possibly be a raw material for another. The information on waste exchange and matching could be done through database calculation. Data for example on waste availability, quality or reprocessing needs to be collected, validated for accuracy, and stored (typically using database technology or computer spreadsheets). Data collection processes must be straightforward, and data must be collected systematically and consistently. In this phase, it is important to assign responsibility of data collection to ensure that it is being collected correctly. This includes quality control to ensure that data are accurate.

c) Evaluate and manage performance

Key components of the evaluation phase are data compilation, data analysis, and communication. The evaluation phase includes organizing, synthesizing, and aggregating data. Data analysis is then performed to provide insight by converting data facts into useful knowledge. Reporting and communication, a component of performance evaluation, is the dissemination of information to stakeholders in a form that they can assess the sustainability and resilience of value chains and their implications and realize what actions are needed.

2.4 Industrial Symbiosis Indicators

Industrial Symbiosis (IS) is recognized as one of the most promising strategies to pursue circular economy and achieve sustainable development. Therefore, both organisations and policymakers are largely interested to identify proper ways aimed at supporting and implementing IS in practice. The literature has highlighted that one of the main gaps is the lack of proper indicators to measure the phenomenon. Measuring the performance of IS is useful for two purposes: communication and management. From the former perspective, the (potential) benefits associated with IS can be communicated to stakeholders, policymakers, citizens, and customers, for example aimed at enforcing the green reputation of the involved companies. From the latter perspective, knowing the (potential) benefits associated with IS can help company managers to implement further activities towards the sustainability practice.

For monitoring and controlling the development and progress of an IS system, an indicator system must be set up to standardize and assess the IS (sustainability) performance. By setting up a sustainability indicator system which is in line with the quantifiable goals, the progress of the IS system can be continuously tracked and monitored. If an overarching organizational unit or a core team of the IS system is established, it could control and push the IS performance towards the trajectory of circular economy and sustainable development. Once the corresponding sustainability contribution of IS can be evaluated in a quantifiable manner, it can thus significantly influence the further course of IS implementation and can promote the full exhaustion of IS potentials.

The challenge is to formulate a common sustainability goal for the IS system and to develop informative indicators accordingly. The meaningfulness and information content of individual indicators should also be assessed carefully; for a holistic view, a large number of different indicators from the three sustainability dimensions should always be included in order to avoid a view that is one-sided.

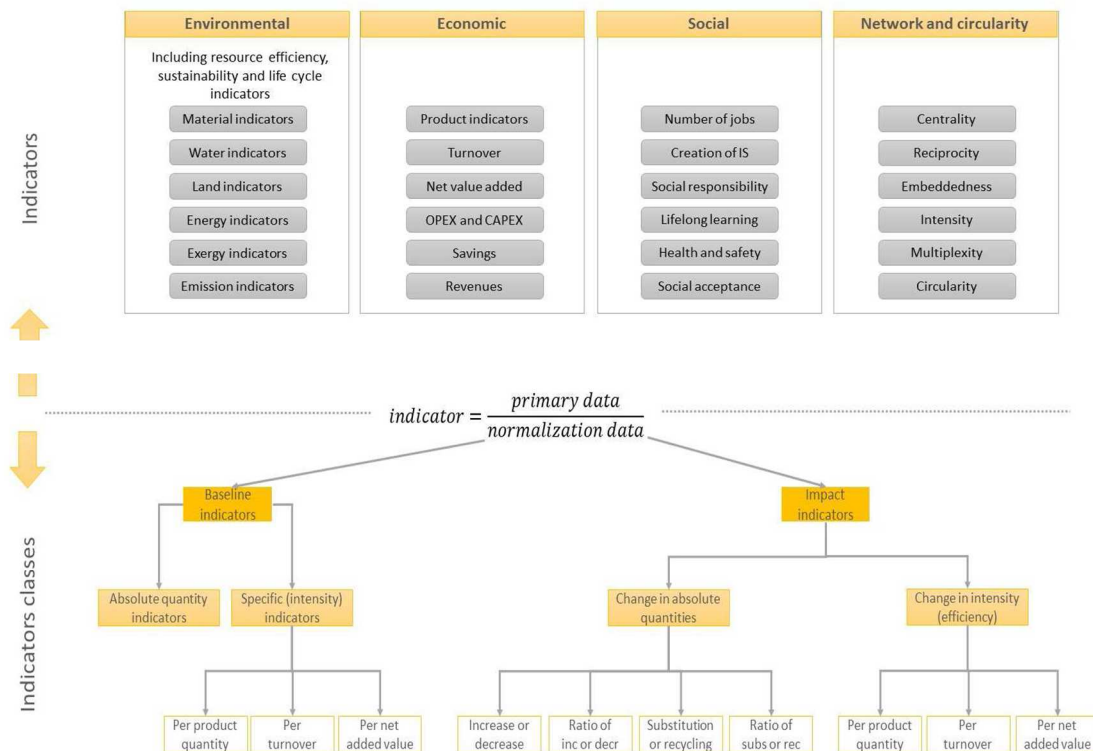
To set sustainability objectives and to evaluate and track their performance over time can be done by a quantitative indicator system. Established and (partly) internationally standardized methods—such as Material Flow Analysis (MFA), Material Flow Cost Accounting (MFCA), Social Network Analysis (SNA), and Life Cycle Assessment (LCA)—can be used in order to place the indicator system on a solid and robust foundation and to adequately meet the multi-faceted sustainability perspectives in the form of a combinatorial application for deriving suitable quantitative indicators for all three (environmental, economic, social) dimensions of sustainability⁸. The indicator system, once embedded in an Information Technology (IT)-supported IS tool, contributes crucially to the technology-enabled environment of IS systems, driving sustainability trajectories.

Examples of IS indicators

This is an example from the FISSAC⁹ project, Task 1.4: Identification and development of eco-innovation, waste and IS indicators. An overall IS indicators structure is shown in the following graph. The structure of the proposed set comprises baseline performance indicators, which quantify the performance of the IS network in a static manner, and impact indicators which quantify the change of performance over time. Both baseline and impact indicators contain absolute and specific indicators. All the specific indicators in the report are normalized in terms of unit amount of product, turnover and net value added.

⁸ Lütje A, Wohlgemuth V. Tracking Sustainability Targets with Quantitative Indicator Systems for Performance Measurement of Industrial Symbiosis in Industrial Parks. *Administrative Sciences*. 2020; 10(1):3. <https://doi.org/10.3390/admsci10010003>

⁹ <https://fissacproject.eu/en/>



The list of indicators as proposed by FISSAC project are presented in Table 2, which are grouped into environmental, economic, social, circularity and network indicators. Life cycle indicators are handled as a sub-group under environmental indicators. The use of basic indicators can be used to quantify environmental, economic and social aspects while life cycle indicators include composite indicators as well.

ENVIRONMENTAL	Material consumption (primary and secondary raw material consumption)
	Energy consumption (fuel, thermal energy, electricity, renewable energy consumption)
	Exergy
	Air emissions (GHG and other emissions)
	Solid waste generation (hazardous and non-hazardous wastes)
	By-products
	Life cycle indicators (resource depletion, carbon/water/ecological footprints, cumulative energy and exergy demand, life cycle cost)
ECONOMIC	Product quantity
	Turnover
	Net value added
	OPEX (material, energy etc. costs, environmental cost savings, revenues from IS activities)
	CAPEX
SOCIAL	Job creation and retention

	Creation of IS
	Social responsibility
	Lifelong learning
	Health and safety at work
	Rate of community participation
	Level of social acceptance
	Community development
	Innovation and investment in R&D
CIRCULARITY	Environmental impact momentum
	Utility (lifetime and function served)
	Environmental cost effectiveness
SNA (social network analysis)	Betweenness and closeness
	Reciprocity
	Intensity

Table 2 Main indicator groups proposed for monitoring IS initiatives (from FISSAC project)

Through reporting, organisations involved in IS schemes can communicate their performance and impacts on sustainability topics, spanning environmental, social and governance parameters. It enables them to be more transparent about the risks and opportunities they face, assess sustainability performance with respect to laws, norms, codes, performance standards and voluntary initiatives, avoid publicized environmental failures, and ensure transparency in the waste exchange process and quality of the secondary materials. Additionally, reporting benefits the organisations by mitigating negative environmental issues and improving green and circular reputation.

2.5 Certification

Certification is an important and growing component of reporting and accountability. A certification is a confirmation that a product or a service meets defined criteria of a standard. ISO¹⁰ defines certification as: "any activity concerned with determining directly or indirectly that relevant requirements are fulfilled". It certifies that a management system, manufacturing process, service, IS performance or documentation procedure has all the requirements for standardisation and quality assurance.

2.5.1 Standardisation: the step before certification

"Standards are agreed definitions or specifications of units, methods, tests products, processes or services. They provide people and organizations a basis for mutual understanding. Standards are everywhere; they make life easier, safer and healthier for businesses and consumers. Standards are useful for optimising performance, ensuring the health and safety of consumers and workers, protecting the environment and enabling companies to comply with relevant laws and regulations. Standardization is identified in Horizon 2020 as one of the innovation-support measures since it bridges the gap between research and the market and facilitates the fast and easy transfer of research results to the European and international market"¹¹.

The standardization framework is constantly adapted to the needs of industry, users or politics¹². Thus, standards support market-based competition and help ensuring the interoperability of complementary products and services, while reducing costs. Pohle¹³ et al. (2018) concludes that standards are a source of knowledge and an option to spread and diffuse knowledge within an innovation system, by facilitating market access, supporting the diffusion and transfer of technologies, enhancing the flexibility of management, fostering different forms of innovation and providing comprehensive scientific and practical knowledge for everyone, at low cost.

One of the most well-known bodies that develops standards to ensure the quality, safety, and efficiency of products, services, and systems is ISO ([International Organization for Standardization](#)), which is an independent, non-governmental, international organization. For companies and organizations of any type that require practical tools to manage their environmental responsibilities, there is the **ISO 14000¹⁴ family**. For example, a formal criterion for recruiting the members of an IS network may be that participating companies have an Environmental Management Systems (EMS) certified according to the ISO 14001 standard, or

¹⁰ <https://www.iso.org/standard/39976.html>

¹¹ CEN. (2018). Industrial Symbiosis : Core Elements and Implementation Approaches. December, 7.

¹² CIRCE. (2018). Regulatory bottlenecks and standardisation needs identified by the SPIRE sectors. 768755.

¹³ Pohle, A., Blind, K., & Neustroev, D. (2018). The impact of international management standards on academic research. *Sustainability (Switzerland)*, 10(12), 1–19. <https://doi.org/10.3390/su10124656>

¹⁴ <https://www.iso.org/publication/PUB100372.html>

a similar type of standard. ISO 14001 certification implies that a certified company has a number of routines and monitors its different material and energy flows and its environmental aspects.

Besides, a certified EMS requires the development of emergency management plans and containment alternatives in case of accidents. Such precautions are very important in the context of symbiotic exchanges between companies within an IS network. Furthermore, ISO 14001 requires continuous improvements in the environmental performance of certified companies. To maintain its certification the company then needs to start implementing more ambitious steps in its environmental work. At this stage, the improvement potentials offered by becoming part of an IS network can become more attractive to companies.

This is also important for the continuous development of IS networks themselves. Cohen-Rosenthal (2000)¹⁵ has underlined the importance of placing a strong emphasis on continuous environmental improvement. ISO 14001 requires certified companies to implement training and other measures to raise the environmental awareness and involvement of employees. This is intended to ensure commitment to the environmental work, and may thus also be beneficial for IS networking, as strong commitment is also a central factor of successful networking.

Another series, the **ISO solid recovered fuel (SRF)**¹⁶ is a collection of nine new standards aimed at providing an agreed terminology, methods and quality levels to facilitate trade and growth in the industry. They cover classifications, test methods, harmonized definitions and terminology, safe handling and more. Made from turning landfill into a clean source of energy, solid recovered fuels are a powerful way of reducing carbon emissions and contributing to a greener world. A growing industry, it involves taking solid wastes, often from our own households, and transforming them into energy for heat and electricity. This series of ISO standards help support its expansion in a sustainable way.

2.5.2 Certification of IS re-usable products, components and materials

The traceability of the characteristics and conditions of the product structure, the key components, and the materials along the phases of the IS value-chain are critical assets for the correct evaluation of the product environmental performance in view of increasing the re-usability of resources. Specific standards and protocols should be in place to ensure security, data protection, and data sovereignty, and to regulate data ownership and intellectual property.

¹⁵ COHEN-ROSENTHAL, EDWARD. (2000). A Walk on the Human Side of Industrial Ecology. *American Behavioral Scientist - AMER BEHAV SCI.* 44. 245-264. 10.1177/0002764200044002007.

¹⁶ <https://www.iso.org/news/ref2690.html>

Certification can be applied to the products, components and materials circulating within the circular value-chain, in order to increase the level of confidence for industries and consumers re-using these resources. Specific technologies, methods, procedures and policies should be developed to define the scope, the mechanisms, the characterization contents and the outcomes of certification, along with the business requirements, for different product categories, materials and sectors.

A typical certification process, according to most certification bodies, include the steps below:

1. Contact the certification body: The organisation contacts the certification body to inform of their intention to apply for a certain type of certification.
2. Check compliance with criteria: The next step is to go through self-assessment using designated checklists. The documentation to prove that the criteria set by the certification body are fulfilled is prepared by the organisation and is available to the auditor.
3. Agreement with auditor: Once the auditor reviews and accepts the initial assessment of the compliance with the criteria, then there is an agreement.
4. Audit: The auditor and the organisation decide when the actual audit will occur. The certification procedure can include both a “desk” documentary analysis and an on-site audit. When the audit is finalised, the auditor sends a report with information about the organisation’s compliance with the criteria.
5. Certification: If the criteria are fulfilled, the certificate can be issued. Certification requires full compliance to all criteria. If the collector fails to comply with one or several of the criteria the collector is granted some extra time from the audit date to correct minor deviations. Furthermore, there is an annual surveillance audit, as well as recertification audit, usually every three years.

Furthermore, certification involves several complex issues that organisations need to address, including certificate proliferation, greenwashing, trust and privacy:

- Certificate proliferation and complexity. As consumers demand more transparency, the number of competing labels attesting to environmental qualities is proliferating.
- Greenwashing. The term greenwashing refers to deceptive corporate marketing campaigns that seek to persuade the public that the company’s products, aims and policies are environmentally friendly. A related practice is providing financial support to a sustainability initiative or group in order to use their green labels without having to prove that the company’s products or processes meet clearly defined metrics.
- Trust. As certificates proliferate, consumers may lose trust in labels, particularly if they are not tied to a credible standard. One major source of mistrust is company-specific labels, which NGOs have criticized for lowering standards and transparency.
- Data privacy. Consumers are deeply concerned about how companies may use their data for traceability. Nevertheless, when it comes to circular business models, companies will need to trace information through the usage to further processing, including recycling or remanufacturing.

The expected **benefits** of the wide-spread adoption of certification procedures include the increase in the stability of re-usable materials and products volume and conditions, and the activation of multiple re-use cycles opportunities, ultimately increasing the attractiveness of high-value circular business options.

Certification schemes allow implementing the circular economy framework, having numerous benefits to organisations, including:

- Ensuring that the products will have an environmentally and socially sustainable life cycle.
- Certifying the systemic approach to circular economy management.
- Providing guarantees on the circularity of the economy.
- Making its products / services more competitive.

2.6 Certification schemes/initiatives

Certifications from respected third parties reinforce and amplify a company's sustainability efforts and are clearly viewed as the most trustworthy source of green credibility for business. In fact, most customers researching a solution, product or service will often seek out companies with well-regarded seals and certifications. The world of certifications is currently complicated because of the lack of a single agreed upon industry standard. The organizations providing frameworks and standards each provide their own approach to the reporting which makes it incredibly difficult to decide which reporting-related certification to pursue. While the upcoming CEAP's industry-led reporting and certification system designed by the European Commission is due within 2022, a presentation of a diverse list of available certification schemes is presented hereinafter.

Circular economy certification - XP X30-901 standard certification

To implement the United Nations 2030 Agenda, the European Parliament approved the European Green Deal in January 2020. Immediately afterwards, in March 2020, the European Commission approved a new action plan on the circular economy, partially modifying that of 2015. Organisations wanting to stand out as leaders in the field of circular economy management can adopt a circular economy management system and, pending the release of the ISO TC 323 standard on circular economy management prepared by the ISO committee, can refer to the "XP X30-901 Circular Economy - Circular economy project management system - Requirements and guidelines" standard developed by AFNOR¹⁷. Circular economy certification according to the XP X30-901 standard offers numerous *benefits* to organisations, including: certifying the systemic approach to circular economy management, providing guarantees on the circularity of any circular economy projects adopted, making its products / services more competitive and enhancing corporate image.

End of waste (EoW) certification method, EC

The **end-of-waste (EoW)** criteria¹⁸ developed by the European Commission as an emerging certification method, which would make it considerably easier to market products using recycled material. Criteria should not only be based on quantitative criteria, such as the demand for (potential) secondary raw material or the amount of waste shipment/generated, but also on qualitative criteria reflecting the risks to human health and the environment. Material streams presenting obvious risks for human health and the environment should only be prioritised for EoW potential status if there is evidence that they can be properly decontaminated through established processes, not leading to further re-injection of associated risks in the economy.

¹⁷ <https://www.afnor.org/en/get-certified/>


¹⁸ <https://eeb.org/library/end-of-waste-criteria-for-europe/>

ISCC¹⁹ sustainability certification of circular and bio-based approaches



When it comes to building trust in innovative approaches and credible communications, third-party certification is a proven tool to verify compliance with sustainability and traceability requirements. ISCC PLUS is a standard well recognised by all stakeholders for recycled and bio-based materials. ISCC PLUS certification provides traceability along the supply chain and verifies that companies meet environmental and social standards.

SCS Recycled Content Certification

 SCS Global Services²⁰—is a third-party certification of claims for recycled content, biodegradable liquid products, and no-added formaldehyde products. SCS Global Services is a long-respected certifier that backs its certifications with vigorous and transparent standards. SCS Recycled Content Certification recognizes products made either in whole or part from recycled waste material in place of virgin raw materials. The percentage of post-consumer or pre-consumer recycled content is reported in compliance with Federal Trade Commission guidelines and ISO standards.

The certification process includes company auditing and supply chain verification. Recycled content certification and reporting demonstrates your commitment to conserving natural resources, helps you meet customer specifications, can qualify your products for LEED and environmentally preferable purchasing (EPP) programs, and supports your sustainability goals. Manufacturers of carpet, textiles, building products, wood and paper products, insulation, clothing, jewellery, and more seek this trusted certification label.

Green Seal



Green Seal²¹—is a third-party certification and labeling program that covers a wide range of products with sector-specific requirements, particularly consumable items for building operations. Green Seal has been certifying products since 1992 and is an ISO 14024 Type I program. Green Seal considers the impacts of a product over its entire life cycle when developing a standard. Building products covered include paints, adhesives, lamps, electric chillers, windows, window films, and occupancy sensors. Green Seal is referenced in several LEED rating systems, and cleaning products for industrial and institutional use are referenced in LEED for Existing Buildings in Operations and Maintenance.

¹⁹ <https://www.iscc-system.org/about/circular-economy/>

²⁰ <https://www.scsglobalservices.com/services/recycled-content-certification?scscertified=1>

²¹ <https://greenseal.org/splash/>

Cradle to Cradle Certified^{CM} program



The Cradle to Cradle Certified^{CM} program is a third party, multi-attribute eco-label administered by the Cradle to Cradle Products Innovation Institute that assesses a product's safety to humans and the environment and design for future life cycles. The program provides guidelines to help businesses implement the Cradle to Cradle framework, which focuses on using safe materials that can be disassembled and recycled as technical nutrients or composted as biological nutrients. Unlike single-attribute eco-labels, the Cradle to Cradle Certified program takes a comprehensive approach to evaluating the design of a product and the practices employed in manufacturing the product. The materials and manufacturing practices of each product are assessed in five categories: Material Health, Material Reutilization, Renewable Energy Use, Water Stewardship, and Social Responsibility.

Recycled Plastics Traceability Certification



EuCertPlast

The Recycled Plastics Traceability Certification²² is a new certification scheme (2020) that provides proof of the traceability of recycled plastic material from the source, as well as the specific recycled content of each product. Given that it provides transparent information on the source of the recycled material (pre-consumer or post-consumer), it will increase consumer trust in the product's environmental sustainability. The advantage over similar certifications is that no minimum recycled content is required in this case because the percentage of recycled material in the product is determined precisely (thus increasing the range of products that can be certified). In addition, it can handle material from both pre-consumer and post-consumer sources.

This certification is complementary to **EuCertPlast**²³ certification, given that traceability in the recycling process is now included in follow-up until transformation into the finished product, in accordance with the same traceability criteria. EuCertPlast certification ensures efficient use of resources and compliance with European standards. The goal of EuCerPlast is to establish sustainable and transparent recycling of secondary raw materials and increase their use in new product production. EuCertPlast guarantees producers and their customers that the granulate is made from recycled plastic and that the production process is organized to ensure transparent traceability of raw materials. EuCerPlast certification operates under the European standard EN 15343:2007, issued in April 2008. The particular focus of the scheme is

²² <https://circulareconomy.europa.eu/platform/en/news-and-events/all-news/recycled-plastics-traceability-certification>

²³ <https://www.eucertplast.eu/>

on the traceability of plastic materials in the supply chain, throughout the recycling process and the recycled content quality in the end product.

"flustix RECYCLED – DIN-Geprüft" seal, Germany



The "flustix RECYCLED – DIN-Geprüft" seal²⁴ identifies products made entirely or partially from recycled plastics. DIN certification is suitable for products made from recycled material, such as products manufactured using pre-consumer or post-consumer waste. This includes industrial waste as specified explicitly in DIN EN ISO 14021. Regranulate or semi-finished products as well as end products can be certified. The "flustix RECYCLED - DIN-Geprüft" label clearly indicates the percentage of recycled materials used. The seal has been recognized and recommended by, among others, the EU Commission, the Federal Environment Agency, the German Consumer Initiative Association and the "Siegeklkarheit.de" portal of the German Federal Government.

The seal's high standards and credibility have been further reinforced by numerous international awards. Certification is based on DIN EN ISO 14021 and DIN EN 15343 requirements in conjunction with other standards of the certification system. It covers post-consumer recycled materials (e.g. "yellow bag") and/or pre-consumer recycled materials (post-industrial). It verifies the traceability of materials used and confirms that no toxic substances have been used in the production process. The certification process includes evaluation of the entire manufacturing process.

PolyCert Europe certification schemes



PolyCert Europe welcomes four independent schemes for certification of recycled content under its umbrella with the objective to harmonize their methodologies for the verification of the uptake of secondary raw material in converted polymeric products as recycled content. The certification schemes [QA-CER](#) (BE), [AENOR](#) (ES), [Plastica Seconda Vita](#) (IT) and [Wertstoff PET](#) (RAL) (DE) meet the PolyCert Europe standard and are convinced that joining force and working on the same basis will increase transparency in claims made by companies about the secondary material they use and will support the transition to circular economy for plastics and other industries.

The purpose of PolyCert Europe is to contribute to a comprehensive mutual recognition framework among certification schemes on the uptake of secondary raw material by converters and compounders complying with REACH Regulation²⁵ and / or with European and

²⁴ <https://www.dincertco.de/din-certco/en/main-navigation/products-and-services/certification-of-products/environmental-field/recycled-materials/>

²⁵ <https://osha.europa.eu/en/themes/dangerous-substances/reach>

/ or National Product Standards or Legislations. The mutual recognition framework has the objective to interface with other certification schemes along the polymer value chain based on the principles of chain of custody.

3 Examples / Good Practices of IS Reporting and Certification Systems

Case study #1: Reporting practices by Iberdrola, S.A., Spain

This example could help IS organisations and interested stakeholders to identify and select current corporate Sustainable Development Goals (SDG)²⁶ reporting practices.

Iberdrola's²⁷ stages of the Stakeholder Engagement Process are starting with "Identify the Stakeholders" and concluding with "Monitor and Report." The initial stages describe the stakeholders mapping process, and thereupon the engagement model is presented, which includes the definition of the levels of engagement, the review of the channels and the final design. In stages "7: Identify Relevant Issues" and "8: Identify Risks and Opportunities," the company engages with stakeholders over its material issues and the potential risks and opportunities arising from them. The 9th stage is the design of the action plan including initiatives in relation to the engagement model and the relevant issues and lastly the monitoring and reporting takes place which focuses on analysing the outcomes and informing on the performance.

Based on on-going dialogue with its stakeholders, and aware of the clear economic, social and environmental impact of all its activities, Iberdrola frames all of its business activities within a commitment to a purpose and certain values, and within the context of respect for human rights. It thus promotes initiatives that contribute to achieving a more just, egalitarian and healthy society, and particularly the achievement of the SDGs, especially those relating to universal access to electricity (goal 7) and the fight against climate change (goal 13). Integrating the SDGs into Corporate Reporting IS organisations can measure and disclose their contribution to and impact on the Sustainable Development Goals (SDGs) in alignment with recognized principles and reporting standards.

Case study #2: Regionally introduced certification system- Lombardy Italy

One example of regional initiatives is the Lombardy region of Italy²⁸, which since 2015 adopted a regional strategy for the sustainable management of raw materials focused on inert materials. The aim is to update the regulatory framework on quarrying activities, with a particular focus on a) environmental assessments, rational land use, raw material saving and

²⁶ <https://sdgs.un.org/goals>

²⁷ <https://www.globalreporting.org/public-policy-partnerships/sustainable-development/reporting-in-practice/>

²⁸ https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=&cad=rja&uact=8&ved=2ahUKewi8tiCy0d33AhXrSvEDHRNdC7UQFnoECAIQAQ&url=https%3A%2F%2Fwww.clustercollaboration.eu%2Fsites%2Fdefault%2Ffiles%2Ffeu_initiatives%2Froadmap_for_ri_on_circular_economy.pdf&usg=AOvVaw0Zm3UxiIMsYDSIDAqncfHp

the environmental conservation of landscapes, including the recovery of abandoned quarry sites, and b) the development of a database to track the flow of recycled materials and respectively a certification system.

The goal is to increase the percentage of secondary raw materials used in the production of new products. Existing technical barriers such as the variability of recovered materials quality and return flows, the lack of material certification protocols and poor material standardization and characterization techniques discourage manufacturing companies to leave the current dependency on virgin material consumption.

Enabling traceability in product and processes by:

- ***Certification for sustainable buildings and infrastructure:*** Inspired by existing standards for the energy classification of buildings, this certification aims at promoting the use of standard and certification protocols for a new building classification based on sustainability. Different degrees of certifications can be reached depending on the environmental footprint of the building and infrastructures. A fundamental feature of building footprint is related to the adopted materials. The percentage of recycled materials used during their construction (e.g., containing recycled and manufactured aggregates, fly ashes) should reduce the value of the building environmental footprint. This certification could boost the use of recycled materials and aggregates in the construction sector.

- ***Environmental certification of products:*** It aims at offering verified, transparent and comparable environmental information about a product sold to the market, both concerning technical aspects and the environmental sustainability. Such information shall be useful for enhancing the capability of properly treating or disposing these products at the end-of-life. Moreover, the integration into proper eco-design legislation motivates manufacturers to increase the environmental performance of their products.

- ***Enhancement (quality and traceability) of the procedure of waste management:*** This can be significantly supported through the implementation of the EU Protocol from collection to recycling in built environment. In particular, by working for the best transposition and effective use in each European contest (country), with specific and effective, sound and coherent links with the national and regional laws, can make it really operational. This Protocol complies with the Construction 2020 strategy, as well as the Communication on Resource Efficiency Opportunities in the Building Sector. The Protocol consists of 5 components (the first three are based on the C&D waste management chain and two are of a horizontal nature): a. Waste identification, source separation and collection; b. Waste logistics; c. Waste processing; d. Quality management; and e. Policy and framework conditions. Widespread the protocol at a national scale is an opportunity.

- ***Interregional waste management protocols:*** Interregional transportation and exchange of waste could become a relevant circular economy enabler if properly regulated and managed. The aim is to develop safe and conscious interregional waste management protocols. In

particular, these protocols shall be focused on the enhancement, both in terms of quality and traceability, of the procedures of waste management, from collection to recycling in every sector. The development of IT waste management platforms in a Zero Waste perspective supports the transparent implementation of such protocols. As an example, traceability is fundamental for textile, like concerning the chemicals used during production. The product passport in the textile already exists and is related to ECOTEX. ECOTEX is a textile international standard for companies created by companies themselves. ECOPASSPORT is the quality certification aimed at evaluating the sustainability of the value chain.

- **Enhance (the quality and traceability of) the procedure of waste management, from collection to recycling in every sector:** Coming from a cross-sectoral analysis, the aim is to build a common protocol on waste management from collection to recycling of end-of-life products, enabling a more efficient recover and recycling of goods. These protocols can be thought in two directions: towards citizens and towards companies and institutions, to support to build awareness and credibility and achieve long-term sustainability of the system.

With the development of sustainable certification protocols applicable to the re-usable materials, as well as to the final products embedding these materials, it is possible to extend the market attractiveness of the opportunity. IS organisations can take ideas from this example on how to develop certification protocols tailored to their re-usable materials if needed and how the standardisation and certification expands the market opportunities.

Case study #3: Own certification scheme by Estonian Recycling Competence Center (CDW RECYCLING)

In an effort to overcome the apparent barriers in improving the quality of recycling and the market of CDW²⁹ recycled products (e.g., recycled aggregates), the waste management sector in Estonia through its Waste Management Association initiated the creation of a Waste Recycling Cluster (eventually becoming the Recycling Competence Centre). The development of the Recycling Competence Centre's own trademark for certifying the quality of recycled products has tackled two important barriers: a) a considerable lack of trust in recycled materials, perceived as of lower quality by builders and developers, and b) proof that recycled materials have equal technical standards to virgin materials.

The Recycling Competence own certification scheme for recycled aggregates set the necessary quality requirements for recycled CDW according to international standards. The development of one single certification scheme, within the CDW recycling sector for recycled products, enables a uniform approach to secondary materials and harmonizes the market environment for accepting such materials for use, compared with natural materials for construction purposes.

²⁹ <https://www.urbanwins.eu/estonian-recycling-competence-centre/>

The certification increases the visibility and confidence in use of this material instead of natural aggregates and it is expected to boost the image of recycled CDW while raising awareness about the quality of the recycled materials among the relevant actors in the construction and retail sector (of materials). The project has been very successful across the CDW management sector in Estonia. It has a good replicability potential that could enable other small-medium sized Member States or regions to learn from this case study, and ultimately apply similar concepts on their IS territorial projects.

Case study #4: Voluntary environmental certification scheme of the eco-industrial (EIP) parks in Tuscany, Italy

A voluntary certification scheme has been adopted by a public entity, the regional government of Tuscany (Italy), as a policy tool to disseminate the concepts of industrial ecology³⁰. The approval of a regional regulation represents the first adoption in European environmental and industrial policies of a voluntary tool aimed at stimulating the creation and dissemination of eco-industrial parks. This new certification method is analysed by focusing on the prevention of pollution.

The requirements and the criteria are strongly based on a cooperative approach, aimed at creating synergies among local actors by coordinating their actions at the territorial level. This approach represents a concrete effort to implement a “holistic vision”: if local actors want to obtain a voluntary certification and the related benefits they are “forced” to cooperate in designing local development strategies and policies. These include improved image and consequent attraction of investments, the possibility of obtaining priority public funds from the regional government, along with a shared environmental improvement plan for the area. This is undoubtedly one of the greatest strengths of the standard, and it allows other regions (both in Italy and the EU) to follow the path of Tuscany.

Another strength of this approach is the ample sharing of goals by the various regional departments in issuing the certification scheme. This widely shared agreement means that the Regulation considers exclusive financial incentives for the areas that will get the APEA certification in the future. The Regulation provides for an easier certification process for existing areas than for new construction areas. It is expected that this difference will lead to certification, especially through brown-field redevelopment instead of through the creation of new areas.

Along with the strengths there are also weaknesses regarding this voluntary certification scheme. The first weakness is linked to the audit that checks whether the criteria required for issuing a certification have been fulfilled. The important role in this audit process played by the municipality where the industrial area is located has been identified as a negative aspect.

³⁰ Daddi, Tiberio & Iraldo, Fabio & Frey, Marco & Gallo, Paola & Gianfrate, Valentina. (2015). Regional policies and eco-industrial development: The voluntary environmental certification scheme of the eco-industrial parks in Tuscany (Italy). *Journal of Cleaner Production*. 114. 10.1016/j.jclepro.2015.04.060.

The municipality is one of the main actors in local management and one of its institutional purposes is the promotion of its own local area by attracting investment capital from outside the area. Its involvement in the certification could lead to a conflict of interests, although the fact that the regional government can carry out spot checks in certified areas partially mitigates this weakness. One way to overcome this could be to create a system of private evaluators, accredited by the regional government, drawing on the methods adopted by similar processes for issuing environmental certifications such as ISO14001 or Regulation 1221/2009 (EMAS).

Another weakness lies in the criteria and indicators included in the standard. The indicators set requirements that are only partially based on the principles of industrial ecology and industrial symbiosis. Considering the minimum criteria, there is a lack of specific indicators that specifically refer to the recovery and/or exchange of energy or materials. There is also a lack of indicators on the economic performance of the area. In the current version, the criteria mainly focus on environmental issues. In a future review and update of the criteria (an activity already provided for by the Regional Regulation), new criteria could be included that focus more on the application of these principles.

This experience can also influence national as well as European eco-industrial policies. At the national level, the certification scheme for EIPs has generated great interest. As Tuscany is seen as one of the most advanced regions in the field of sustainability, the scheme will likely be emulated by other regions or adopted nationally. At the European level, the experience could contribute to the recent policies adopted by the European Commission in the field of circular economy.

Case study #5: ReMade in Italy® certification

ReMade in Italy^{®31} was found in 2009 and in 2013 Accredia (Italian National Accreditation Body) recognized it as the first certification scheme in Italy and Europe to verify the recycled content in a product. Certification attests the traceability of production, starting from the verification of the source of input raw materials, to the finished product. ReMade in Italy represents a useful tool for transparency and simplification for public administrations and companies, to identify the recycled products for “Green public procurement”, made mandatory in Italy by the law (Legislative Decree 50/2016).

The certification scheme is governed by a non-profit organization, legally recognized, gathering companies that realize recycled products in various categories (building, street furniture, office furniture, schools, textiles and many more). The **Circular Economy companies Association** is independent and reinvests revenues in institutional activities supporting Associated Companies for self-promotion in the public and private market.

³¹ <https://www.remadeinitaly.it/recycled-products-certification/>

ReMade in Italy® label: at the end of the certification process, a label can be issued to the company, demonstrating the product's recycled material content, under a corresponding class. The label also explains the environmental impacts resulting from the recycling process, in terms of reduction of greenhouse gas emissions and energy savings, in comparison with the production of the same item with raw materials. The label can be directly affixed to the finished product, in its data sheets and reports.

Case study #6: Achieve and sustain high standards - Solid recovered fuel, UK

Solid recovered fuel is a high-quality alternative to fossil fuel produced from mainly commercial and industrial waste. It can be produced to a range of specifications – such as moisture content, calorific value and chemical composition – to meet customer requirements. The recovered fuel has a high calorific value and is used in cement kilns. Refuse derived fuel is also produced, which has a lower calorific value, from residual household waste.

An example of circular economy in action, these alternative fuels not only divert waste from landfill and recover value, but they also reduce the need to extract and burn natural resources such as coal. SUEZ³² helps companies, whatever their scale, to achieve and sustain the highest standards across the entire industrial water cycle – even returning water to the environment, cleaner than when it was extracted.

³² <https://www.suez.co>

4 Topics for Discussion

This section provides a series of themes and areas that could be discussed during the interregional workshop. This list is not final, but subject to modifications and/or updates (if necessary). The term ‘thematic areas’, as indicated below, refers to a broad theme and the term ‘topic(s)’ refers to sub-themes in which the core theme is divided. Three thematic areas have been identified for the interregional workshop on IS reporting & certification systems. Each thematic area comprises some indicative topics, around which the workshop’s presentations and discussions shall revolve. Guest speakers are encouraged to participate in the workshop to provide their input based on their expertise and suggest new ideas and perspectives for the topics under examination. The suggested thematic areas are the following:

Thematic area 1: IS Reporting Systems

Indicative discussion topics:

- **The importance of reporting in industrial symbiosis**

In this introductory session, the importance of reporting systems on the performance of IS transactions will be explained and discussed. Through reporting, IS organisations can communicate their performance and impacts on sustainability topics, and ensure transparency in the waste exchange process and quality of the secondary materials. Partners can elaborate on the benefits of reporting in industrial symbiosis exchanges.

- **Methodology of IS reporting systems and IS indicators**

The methodology intends to demonstrate the link between the direct results from industrial symbiosis transactions and their environmental impact. The significance of an appropriate methodology and the steps to ensure a complete reporting process will be defined. The selection and structure of IS indicators are an important step to quantify the performance of the IS network in a static manner and the change of performance over time. Participants should elaborate on which IS indicators should be used in examples of IS in their territories.

Thematic area 2: IS Certification Systems

Indicative discussion topics:

- **The concept and importance of certification in industrial symbiosis**

The definition of the certification is being explored in the context of industrial symbiosis. The importance of certification as a component of sustainability reporting and accountability will be discussed. The traceability of the characteristics and conditions of the product structure,

the key components and the materials along the phases of the IS value-chain is a critical asset for enabling the correct evaluation of the product environmental performance in view of increasing the re-usability of resources.

- **Standardisation and certification process**

Standardisation, as a procedure before the certification, will be defined. Also the main standardisation institutes such as ISO will be mapped. Once standards are met, then a certification can be granted. The steps of a typical certification process are briefly described. Partners further explore certification steps that focus on waste exchange and reusability of materials. Other complex issues that IS organisations need to address, including certificate proliferation, greenwashing, trust and privacy, can be also be analysed.

- **Certification schemes/ initiatives**

While the upcoming CEAP's industry-led reporting and certification system designed by the European Commission is due within 2022, partners can go through a diverse list of available certification schemes, as the ones presented in Section 3.4. Other certification schemes that participants may be aware of can also be explored. Partners can discuss which of those schemes fit better in the EU context of industrial symbiosis.

Thematic area 3: Examples / Good Practices of Reporting and Certification Systems

Indicative discussion topics:

A list of examples of case studies, such as the ones in Section 4, can be presented and analysed. These examples can help participants elaborate on how organisations that are already participating or aspiring to participate in IS and interested stakeholders can identify and select the most appropriate reporting and/or certification practices. Alternatively, participants can take ideas of schemes introduced regionally such as by a cluster of innovation, a university or an organisation.

5 Guidelines for the organisation of the workshop

5.1 Date, Location and Attendees

The SYMBI Application Form (AF) foresees that two representatives from partners' organisations will attend the workshop in Molise, Italy. Although it is not a prerequisite, it is highly encouraged that partners invite a regional stakeholder or external expert to participate in the workshop. The target audience can include all those individuals, bodies and organisations that can be impacted by the project outcomes, and are interested in utilising project outputs to support the diffusion of industrial symbiosis towards circular economy.

During the project lifecycle, partners have managed to expand their network of contacts, adding new stakeholders and interested institutions from across Europe, such as regional development agencies, higher education institutes and research centres, chambers of commerce, professional associations and public authorities. Respectively, SYMBI partners are advised to invite any other organisation or body involved in reporting and certification systems within industrial symbiosis that can assist towards resource efficiency and circular economy.

The working language of the 1-day workshop will be English, which means that participants must have a sufficient knowledge of the language to be able to fully participate in the hands-on activities. It may include two different types of activities to facilitate the transfer/exchange of knowledge and capacity building among regional authorities' representatives: a) presentations, and b) interactive sessions with roundtable discussions.

Presentations will provide an opportunity for participants to i) acquire a better understanding of the importance of reporting and certification systems, ii) identify potential schemes/bodies for IS reporting and certification iii) explore how IS reporting and certification processes can be used to advance the traceability, transparency and circularity of organisations in the EU and re-used materials. The interactive phase will enable public authorities' participants to come up with new ideas for setting up or utilise existing reporting and certification systems. This will ensure transparency and circularity in organisations and products within Industrial symbiosis transactions.

5.2 Agenda

It is important to have a clear and well-structured agenda, meeting the following criteria.

The agenda should provide enough time for the presentation of the workshop's themes, in order to inform participants successfully and, hence, start a meaningful and fruitful

information exchange and, if possible, discussion. Discussion is a crucial aspect of advancing the efficiency of the exchange of information in the workshop to the extent that it is possible to make the tentative first steps towards establishing know-how transfer. The time provided for discussion should guarantee that an effective two-way flow of information could be established, in order to collect meaningful contributions on behalf of participants. Together with the data and information presented in the workshop, participants' contributions could lead to the development of reporting and certification systems for the industrial symbiosis projects.

Moreover, the agenda should be distributed to the participants before the workshop takes place. The reason for that is that it offers participants the opportunity to prepare themselves better for the discussion. Hence, the agenda along with all other documents that the organisers consider being helpful for the presentation of information and the exchange of views should be distributed before the workshop. Participants should be informed where these documents can be accessed.

Finally, the agenda should provide time for coffee/tea and lunch breaks. Even though these reduce the amount of time that could be dedicated to exchanging opinions, they render the workshop less tiring for participants, and provide opportunities for less formal discussion and networking. As a result, an exchange of opinions among refreshed participants is destined to be more fruitful and provide better data.

The following is an indicative template for the agenda of the SYMBI workshop. Organisers of the workshop are expected to adapt it to its specific needs.

Workshop on IS Reporting and Certification Systems WORKSHOP AGENDA Venue and date: Physical Workshop	
09.00 – 09.30	Arrivals and registration
09.30 – 10.00	Welcome and introduction
<hr/>	
11.15 – 12.30	1st Thematic session – IS Reporting Systems
10.00 – 10.20	The importance of reporting in industrial symbiosis
10.20 – 10.40	Methodology of IS reporting and IS indicators
10.40 – 11.00	Q&A session
11.00 – 11.15	Break
<hr/>	
11.15 – 12.30	2nd Thematic session – IS Certification Systems
11.15 – 11.35	Concepts and importance of certification
11.35 – 11.55	The process towards certification
11.55 – 12.15	Certification schemes/certificates
12.15 – 12.30	Q&A session
12.30 – 13.30	Networking lunch
<hr/>	
13.30 – 15.15	3rd Thematic session – Examples and Best practices of IS Reporting & Certification Systems
13.30 – 14.00	Examples of methodologies for reporting systems
14.00 – 14.30	Case studies of certification schemes
14.30 – 14.50	Q&A session
14.50 – 15.30	Roundtable discussion
15.30 – 16.00	Wrap up: main conclusion and findings

5.3 Instructions for facilitators (moderators and presenters)

The SYMBI A6 workshop will be conducted according to the instructions of the moderators. The latter should make sure that they introduce effectively the aims, activities, outputs and results of the SYMBI project. They will be responsible for the harmonious flow of the workshop. Hence, moderators will make sure that the participation process during the workshop successfully fosters informing, consulting, involving and collaborating with target groups. Moderators should address explanatory remarks about SYMBI to the audience and aim to convey the key messages of the project and activity A6.

Furthermore, they should prepare specific remarks before the workshop in order to: a) serve as icebreakers, b) present clearly the aims and structure of the workshop, c) convey in a brief but clear fashion the organisers' views on the issues at hand and essentially d) incentivise target group members to provide their own opinions. The latter is one of the most important aspects of the responsibilities of moderators; unmotivated participants who do not realise the importance of the issue at hand are destined to provide low quality feedback to the organisers of the workshop. Moderators can increase participants' engagement by focusing first on how they could benefit from addressing the issue at hand, and then by developing remarks as incentive for entering the discussion. Due to the tight schedule of the workshop, moderators and presenters are instructed to strictly enforce session times.

5.4 How to draft the summary report

At the end of the workshop a summary report will be drafted. The summary report should contain the following elements:

- Brief background information on the theme of the workshop
- List of attendees (name, affiliation, contact information)
- Agenda of the workshop
- List of speakers (session, name, affiliation, contact information)
- Main key points from the presentation of each session
- Main key points from the discussion that followed each presentation

The report should start with a brief description of the workshop, the venue, the theme and the objectives of the workshop and provide some background information about the theme. More specifically, this section should briefly explain what reporting and certification systems for industrial symbiosis project are and describe the key schemes and examples that were analysed during the workshop.

Additionally, the report should contain the agenda of the workshop, the number of attendees and information about them, such as their name, field and affiliation (e.g., university, public authority, etc.), as well as information on the speakers of each session.

The summary report should contain information about each session of the workshop, presenting the key issues that were discussed during each session, as well as the main conclusions from the discussion that was held after each presentation. For this purpose, a person should be assigned to keep minutes during each session. Additionally, record of issues raised and perspectives provided by the participants in relation to the discussed topic should be also kept as well as any other aspects that might emerge during the discussion.

Annex 1: Feedback Form

SYMBI Activity 6: IS reporting & certification systems Workshop					
Organised by CoC Molise					
Name:					
Organisation:					
Country:					
Region:					
1. What were your expectations from the workshop?					
2. Considering your experience, how much do you agree/disagree with the following statements?					
	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
The workshop was properly structured and organised					
The agenda was comprehensive and conclusive					
The topics were relevant to the thematic focus of the workshop					
The allocated time to each session (topic) was sufficient.					
The presentations were useful and informative					
The participants were well prepared and informed about the themes of the workshop					
There was enough time for discussions and exchange of ideas.					
Participation in interactive activities enhanced capacity building & mutual learning					
The workshop as a whole has been appropriate and productive					

3. Do you agree that the workshop will lead to improvements in relevant policy measures?

- Strongly disagree Disagree Neither agree nor disagree Agree Strongly agree

4. Will you support the integration of key conclusions drawn from the workshop into regional policy measures?

- Not at all Marginally At some extent Considerably Extensively

5. Are there any issues related to the topics of the workshop that have not been covered therein?

Please describe:

6. Other comments