



PART F

# STRATEGIC RECOMMENDATIONS

SCALING EUROPEAN RESOURCES WITH INDUSTRIAL SYMBIOSIS

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# GUIDELINES FOR INDUSTRIAL SYMBIOSIS IMPLEMENTATION



## PART F - STRATEGIC RECOMMENDATIONS

This document compiles information regarding the deployment of the SCALER project's vision, overall strategy and recommendations for industrial symbiosis.

### SCALER Vision

Based on the integration of multiple best-case scenarios, we propose an implementation pathway for the SCALER vision, to promote a wider application of industrial symbiosis at European level.

### SCALER Strategy

A SCALER roadmap strategy is proposed in accordance with the previously defined SCALER vision. The strategy considers short-term (1-3 years), medium-term (3-5 years) and long-term (5-10 years) actions.

### SCALER Recommendations

Inherent to the strategy definition, we have considered different stakeholders at local, regional, and European levels. The recommendations aim to increase the benefits that would derive from a massive application of industrial symbiosis, helping implement the SCALER vision in the mid-term (~5 years) and long-term (~10 years).

- A - Introduction to industrial symbiosis (video)
- B - Intervening factors
- C - Overview of strategies for IS projects implementation
- D - Operational guidelines
- E - Sectoral outlook
- F - Strategic recommendations

This document is part of a series of guidelines that aim to assist industry players in their implementation of industrial symbiosis.

The full series is available for download at:

[www.scalerproject.eu](http://www.scalerproject.eu)

# SCALER VISION

The SCALER Vision represents the summary of the desired future of widely adopted industrial symbiosis in Europe in regards to four main points: investments and intermediaries, synergy selection, synergy validation and technology selection.

## INVESTMENTS AND INTERMEDIARIES

- World-leading integrated circular economy
- Policy driven multi-stakeholder engagement
- Regulated waste markets
- Ubiquitous circular economy business models
- Equally distributed industrial symbiosis
- Easy access to technical and specialist knowledge

## SYNERGY SELECTION

- Easy access to industrial data (volume, characteristics, composition, public waste identification sheets)
- Easy identification of waste management practices and end-of-life resources
- Easier identification of waste flows and which stakeholders to involve
- Lists of company names, receiving processes and detailed treatments reported (with the technology name)

## SYNERGY VALIDATION

- Synergy economically profitable
- Synergy well established in industrial context
- No intermediary process involved besides transport
- Direct synergy classification
- High scalability potential

## TECHNOLOGY SELECTION

- Reliable technology
- Technology implemented in most EU large industries
- Different technology providers available
- High performance and potential for replication

# SCALER STRATEGY

The SCALER strategy proposed below is an illustration of how the vision could be implemented. It considers short-term (1-3 years), medium-term (3-5 years), and long-term (5-10 years) actions.



## 2-3 YEARS Local operations

Establish:

- Networks
- Resource synergies
- Technology selection



## 1-2 YEARS Local tactics

Promote:

- Best practices
- Case studies
- Tools and methods for adoption



## 3-5 YEARS Regional/National strategies

Implement:

- Circular Economy Business Models and Clusters

## 5-10 YEARS SCALER Vision

Integrated  
European Circular  
Economy

# SCALER RECOMMENDATIONS

The following specific recommendations have been derived in support of, and should be understood in, the context of SCALER's vision and strategy developed by project partners.

For the complete analysis of SCALER's recommendations please refer to the report "Overall strategy and recommendations to foster a wide application of industrial symbiosis" available at [www.scalerproject.eu/resources/reports](http://www.scalerproject.eu/resources/reports)

## Local Level

- Increase top management commitment to mindset change
- Raise awareness of the benefits of industrial symbiosis initiatives
- Develop a long-term view for how to reach those benefits
- Start with small-scale initiatives
- Join, develop, promote industrial symbiosis platforms
- Create a dedicated organisational function on industrial symbiosis and circular economy
- Promote industrial symbiosis within urban areas/cities
- Connect industry, research institutes and knowledge intermediaries
- Facilitate capabilities to build industrial symbiosis networks

## Regional/National level

- Coordinate efforts between public and private stakeholders
- Map regional material flows
- Have an industrial symbiosis engagement policy, both at ministerial and governmental levels
- Implement national funding for industrial symbiosis structures and network development

- Promote industrial symbiosis best practices
- Include industrial symbiosis and circular economy activities in regional/national strategies
- Invest in accessible high-quality knowledge databases
- Invest only in expert, sector-specific knowledge actors
- Ensure compliance of industrial symbiosis activities management with national laws
- Support agencies operating at the level of EIPs and individual firms
- Organise industrial symbiosis discovery and business model design workshops
- Enable and create private-public circular economy partnerships
- Build trust among industries, research institutes/knowledge intermediaries and public authorities

### European level

- Provide financial incentives for industry, research institutes/knowledge intermediaries to engage with industrial symbiosis initiatives
- Support industrial symbiosis through direct EU, national and regional government investments
- Enable competitive and accessible private investment designed for industrial symbiosis
- Devise metrics and set targets for industrial symbiosis, productivity and environmental impacts
- Standardise industrial symbiosis practiced across Europe
- Create a regulated waste market (similar to financial markets)





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