SCALing European Resources with industrial symbiosis

Blueprint for sectoral cooperation on Skills: Industrial Symbiosis and Energy Efficiency

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Project in Brief

**SCALing European Resources with Industrial Symbiosis**

SCALER aims to provide mechanisms to promote a wider application of industrial symbiosis in the European process industry, by developing action plans and adapted solutions to industrial stakeholders and communities.

**Consortium**
- ISQ
- University of Cambridge
- Strane Innovation
- Quantis
- EIT Climate-KIC

**Financing:**
Horizon 2020|SPIRE-13-2017

**Total budget:**
EUR 1.049.481,25

**Duration:**
Nov-2017 | April-2020
Project vision
SCALING EUROPEAN RESOURCES WITH INDUSTRIAL SYMBIOSIS
SCALER Approach and Methodology
SCALER Approach and Methodology

1st Phase
How to unlock a wide implementation of industrial symbiosis, through the identification of success and failure cases, best practices, incentives, tools and methods.

2nd Phase
Evaluate the potential and associated impacts: Map and characterise promising synergies, evaluate the environmental, economic and social impacts.

3rd Phase
Action plan for industrial symbiosis in Europe: Identify future scenarios, produce recommendations and ready-to-use practical guides for implementation.

Dissemination & Communication
- Stakeholder consultation and engagement
- Knowledge transfer
- Wide dissemination of results
Expected Results
Expected Results

- Identification of requirements and needs of the process industries regarding resources, water and energy potential synergies identification and implementation, namely in sectors within SPIRE and represented by project-supporting entities.

- Identification of practices and key enabling technologies to overcome barriers preventing the spread of industrial symbiosis and of key intermediaries to support flow exchanges realisations.

- Tested and validated tools & methods to provide pathways on understanding and applying industrial symbiosis for companies, sectorial associations and local/regional entities.

- Creation of a multi-disciplinary community with interest on industrial symbiosis and actively working towards its wider implementation at local, regional and European level.
Expected Results

- Assessment of the **potential economic, environmental and social benefits** of industrial symbiosis at the European level.

- **Ready-to-use implementation guidelines** aiming to support process industries on Industrial Symbiosis, in particular regarding weighting the benefits and risks, and covering the different organizational levels.

- **Recommendations for policy makers** based on the identification of EU-wide regulatory gaps and needs for industrial symbiosis deployment across the EU territory.

- **Innovation Camp on Industrial Symbiosis** to boost engagement, raise awareness and help solve challenges that the European stakeholders are experiencing concerning the implementation of industrial symbiosis.
SCALER workplan
SCALER workplan

Knowledge Creation

WP 2
Foster resource synergies

WP 3
Assess the potential of IS

WP 4
Action Plan for IS in Europe

WP1 Dissemination & Exploitation
Stakeholder consultation & Engagement

WP5 Project Management

WP6 Ethics Requirements

Policy advice, standardization, dissemination and exploitation

SCALING EUROPEAN RESOURCES WITH INDUSTRIAL SYMBIOSIS
WP 2
Pathways to foster resource synergies
WP2 Planning

T2.1 Consolidate lessons learnt
T2.2 Identify existing best practices for IS in the process industry
T2.3 Analyse the role of enabling technologies and key intermediaries for IS
T2.4 Incentives assessment
T2.5 Define tools & methods for IS suitable for different stakeholders

D2.1 – Lessons learnt and best practices for enhancing IS in the process industry
D2.2 – Key technologies and intermediaries for IS ideation and implementation
D2.3 – Incentives assessment
D2.4 – Pathways to increase IS implementation

SCALING EUROPEAN RESOURCES WITH INDUSTRIAL SYMBIOSIS
WP2 – Pathways to foster resource synergies

- **Deliverable D2.1 – Lessons learnt and best practices for enhancing industrial symbiosis in the process industry**

State-of-the-art literature review, gathering of primary and secondary data and insights from local/regional entities and process industries about best practices for enhancing IS in the process industry.

- **Deliverable 2.2 (October 2018) Key technologies and intermediaries for industrial symbiosis ideation and implementation**

Gathering of primary and secondary data and insights from local/regional entities and process industries about enabling technologies and key intermediaries to support the implementation of industrial symbiosis.
WP 3
Assessment of potential for industrial symbiosis
**Task 3.1 - Mapping of industrial facilities in Europe**

**Goal**
- Locate & map process industry facilities in Europe

**Interest for the project**
- Define perimeter for the European IS potential assessment (T3.6): sector prioritisation
- Gather industrial facilities information in a database
- Map all industrial sites on a GIS to carry out statistical analyses on distances

**Actions**
- List the industrial sectors to be analysed in WP3
- Define a data gathering template
- Collect administrative data, GPS coordinates, economic activity details & production flows from various means
- Integrate the data in a GIS

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**Identification of the facility**

<table>
<thead>
<tr>
<th>Name of the parent company</th>
<th>Latitude &amp; Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of the facility</td>
<td>Address</td>
</tr>
<tr>
<td>Country</td>
<td>NACE-code (4 digits)</td>
</tr>
<tr>
<td>Production volume</td>
<td>Main economic activity</td>
</tr>
<tr>
<td>Raw material volume</td>
<td>Number of employees</td>
</tr>
<tr>
<td>Number of operating hours in year</td>
<td>Complementary information</td>
</tr>
</tbody>
</table>

All Annex I activities of the facility (according to the coding system given in Annex I and the IPPC code where available)

Activity 1 (main Annex I activity) Activity N
**Task 3.2 – Flows & Synergies: Identification, Characterisation & Assessment**

**Goal**
- Develop a reusable methodology to identify synergies
- Identify 100 synergies to quantify the European IS potential

**Interest for the project**
- The **100 most relevant synergies** identified will be techno-economically, environmentally and socially assessed
- Characterise the input and output flows of each sector

**Actions**
- Analyse all the sectors defined in T3.1 and develop an I/O database
- Define a taxonomy and an algorithm to automatically identify synergies
- Identify 1000 synergies to be shortlisted (m9)
- Produce D3.1: List of the 100 most promising synergies (M12)
Task 3.3 - Technology Database for Synergy Setups

Deliverable D3.2 – Technology database template & guide for upgrading
Deadline – April 2019

- Objectives:
  - Identify the best available and emerging technics and technologies for IS synergy implementation.
  - Assure their technical and economic feasibility.
  - Assure their positive environmental and social impacts.

- Inputs: T2.2 (Best Practices on IS); T2.3 (The role of Enabling Technologies); T3.2 (most IS promising cross-sectorial synergies).

- Outputs: T3.4 (Environmental Life cycle assessment); T3.5 (Socio-Economic impact assessment).
SCALER Impact

EUROPEAN

EU institutions

REGIONAL

Regions

CCI

Multipliers

LOCAL

Site

Site

Site

Site

Site

Site

Site

Site

Site

Impact of SCALER

Quantified potential of IS in Europe, estimation of investment, vision, policy recommendations

EU IS strategy and Enabling policy

Information, experience and tools to set up and animate ecosystems

Target local sites, link them, support in implementation

Information, tools, experience, methods to set up synergies

Create industrial synergies

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Get involved!

Visit our website

Find out more at www.scalerproject.eu and see how you can work with us.

Join our newsletter

Keep abreast of the latest information on industrial symbiosis by joining our newsletter: http://bit.do/scalerproject-newsletter

Contact us

Need more information or want to work with us? Contact us at info@scalerproject.eu to get in touch.