



ResC4EU
RESILIENT SUPPLY CHAINS FOR EUROPE

Interactive Demonstrator

... **Industrial Symbiosis for Resource
and Material Savings**



Try it now
 <https://resc4eu.greentwin.app/demonstrator-2>

Overview

This demonstrator presents Industrial Symbiosis enabling the synergistic exchanges of waste streams, by-products, waste, and energy among companies within a local, industrial, or retail ecosystem. Industrial Symbiosis is a collaborative approach linked to the circular economy and focused on identifying underutilized resources in one company and matching them with the needs of another. This involves learning from other sectors and facilitating their reintegration into the value chain. This practice promotes enhanced resource efficiency and waste reduction, advancing the principles of the circular economy into practice. This demonstrator is an interactive simulation that allows users to compare conventional supply chains with Industrial Symbiosis alternatives. It is publicly accessible via the ResC4EU platform: <https://resc4eu.greentwin.app/demonstrator-2>

Opportunities

Minimizing Environmental Impact Through Synergies

Promote the shared use of utilities and infrastructure among participating companies, including energy supply systems, waste treatment facilities, logistics, and catering services. Sharing these resources reduces overall resource consumption, operating costs, and the associated environmental impacts.

Resource Substitution Through Industrial Symbiosis

Enable the use of residual resources from one company as input materials for another. By-products, waste materials, and excess heat can substitute virgin raw materials, reducing waste generation, lowering resource extraction, and improving resource efficiency.

Cascading Resource Use and Industrial Resilience

Develop new activities and business opportunities that enable the reuse and valorization of resource flows based on industrial ecology principles. Cascading the use of materials, energy, and other residual resources extends their value, supports the creation of new value chains, and strengthens supply chain resilience. By fostering local collaboration and reducing dependence on primary raw materials and disposal routes, industrial symbiosis enhances both environmental sustainability and regional resilience to supply disruptions.

How It Works

Users can select supplier companies providing water, energy, or raw materials, and choose between conventional and Industrial Symbiosis sources with a defined quantity.

Step 1 - Select Suppliers and Resources Choose a supplier, resource type (water, energy, or raw materials), source type, and quantity, then click "Add to Simulation." Repeat to build a full scenario.

Step 2 - Calculate Environmental Impact Click "Calculate GWP Impact" to view results, including:

- Total Global Warming Potential (GWP, kg CO₂eq)
 - Breakdown by resource
 - Resources and materials saved or avoided
 - Comparison between conventional and industrial symbiosis options
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About the ResC4EU Project

The ResC4EU project aims to support EU businesses, especially small and medium sized enterprises (SMEs), to become more resilient and sustainable and be able to quickly adapt to supply chain disruptions such as experienced during COVID-19 crisis, geopolitical tensions or disasters by adopting advanced technologies. ResC4EU will provide an open space for collaboration, develop and provide models and tools that can assist SMEs in detecting and anticipating disruptions in their supply chains, and offering SMEs tailored support and training programmes as part of the ResC4EU Net-Zero Industry Academies. Further, manufacturing SMEs in need of implementing advanced technologies will be brought together with tech-savvy SMEs providing innovative solutions.

For more details: <https://cordis.europa.eu/project/id/101137643/results>



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Demonstrator Owner

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