



REFRAME

Circular Economy strategy FRAMEwork
for sustainable SMEs

IO3: Circular Economy Implementation Framework (CE Framework)

Disclaimer:

Project Agreement No. 2020-1-EL01-KA202-078870

 Co-funded by the
Erasmus+ Programme
of the European Union

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 SIGMA



3.8 Supply chain factors

Modern-day supply chains, often incorporating complex networks of information and business processes, play a crucial role in the fostering of CE initiatives in an SME. Therefore, it is important to understand the main supply chain-related drivers and barriers when it comes to applying CE strategies.

Retaining valuable resources in a closed loop will help SMEs reduce the demand for primary raw materials and enable supply chains to mitigate their supply dependence and exposure to price volatility. Metal manufacturers are a good example of how supply chains benefit from the existence of recycled (scrap) metal markets. In addition, CE facilitates the collaboration between suppliers and customers driving transparency across the value chain. Moreover, CE aims at zero-waste generation and optimal energy utilization, therefore establishing a CE framework can help SMEs enhance the efficiency of resources in supply chains, optimize the logistics and reduce costs, eventually leading to higher economic gains. Finally, incorporating CE in SMEs supply chains can amplify product differentiation and help firms improve their brand image.

On the other hand, a major supply chain barrier for SMEs is the limited number of suppliers in the market offering circular materials. Since CE is still a rather new model, there hasn't yet been established an adequate number of suppliers able to provide SME's green materials. In addition to that, firms report that the absence of network support both by customers and suppliers deriving from a lack of environmental awareness does not help in the direction of green procurement or product life extension. Furthermore, another supply chain barrier for SMEs is the uncertainty in the quality and volume of the return flows that prevent accurate planning or impose additional costs during processing. SMEs procuring materials from the recycled market are exposed to increased technological and economic burdens when dealing with impure or low-quality inputs in their operations. This barrier is also closely related to the bad recycling practices followed by the industry or public authorities that prevents the re-usage of the materials. An organisational aspect that influences the implementation of CE in supply chains is related to the industry attachment to the linear model. Thus, it is often the case that managers choose to invest in the development of a new product or a marketing campaign and not in technologies that promote resource efficiency or waste management. Finally, the additional cost of transporting back unused materials to the suppliers has also been identified as a supply chain barrier.

When evaluating the importance of the supply chain factor, it is important to consider the following questions:

- Would dependence on your existing suppliers be mitigated if a secondary supplies market existed?

- Would a secondary supplies market reduce your company's exposure to raw material price fluctuations?
- Would CE initiatives enhance resource efficiency and optimize logistics in your company?
- Are there alternative suppliers able to offer green resources to your company's supply chain?
- Is your network of customers and suppliers interested in participating (e.g. actively involved in recycling, providing green supplies) in green supply chain initiatives?
- What is the tolerance of your company when it comes to processing recycled supplies, possibly of lower quality than the existing ones?
- Is a green supply chain a priority for the top management of your company?