



NRP 73 CEO Brief

Circular Economy (CE): Business Opportunities and Strategies for a Sustainable Economy in Switzerland

Significance for CEOs

- For the economy to stay within planetary boundaries, innovative strategies are needed. The concept of a sustainable circular economy is one such strategy. It encompasses the entire value chain from raw material extraction to production and waste management. All the steps in the value chain offer business opportunities for companies, such as reducing resource dependency, increasing competitive advantage, adapting to new circularity regulations and consumer expectations, as well as improvements sustainability wise.
- This CEO Brief is based on the findings from research projects working on a sustainable circular economy (SCE) within NRP 73, developed in partnerships with big companies as well as SMEs (Eberhard, Holcim, Isofloc, Losinger Marazzi, Nespresso, Pavatex, SV Group, Tisca, V-Zug, to name a few). These partnerships demonstrate that the concepts and tools on circularity help to reinvent business models that align with sustainability.
- This CEO Brief aims at highlighting the business opportunities of a sustainable circular economy (SCE) for Swiss companies. It also provides guidance for businesses moving towards sustainable material cycles; overcoming legal, institutional and organizational barriers; as well as creating circular business models. Tools and methods developed within NRP 73 can help conceptualize, steer and manage the transition towards CE for companies.

What Is a Sustainable Circular Economy?

A sustainable circular economy (SCE) is **more than recycling** and more than keeping as much material as possible in the economy for as long as possible. We define SCE as a multidimensional strategy that aims at increasing the use of resources – through options such as reuse, repair, refurbish, remanufacture and recycling – and at reducing the general consumption of resources – through refuse and reduce options as well as innovations for material savings. All these options must be prioritized against their overall environmental performance.

Circular economy is not per se sustainable. **Companies must ensure that their circular business models and products generate environmental, social and economic benefits.** More broadly, SCE considers the biosphere as providing the framework conditions for all human and economic activities. Known as the planetary boundaries, these conditions should therefore be considered as a compass to develop new business activities as well as to steer and evaluate the implementation of CE strategies during the transition.

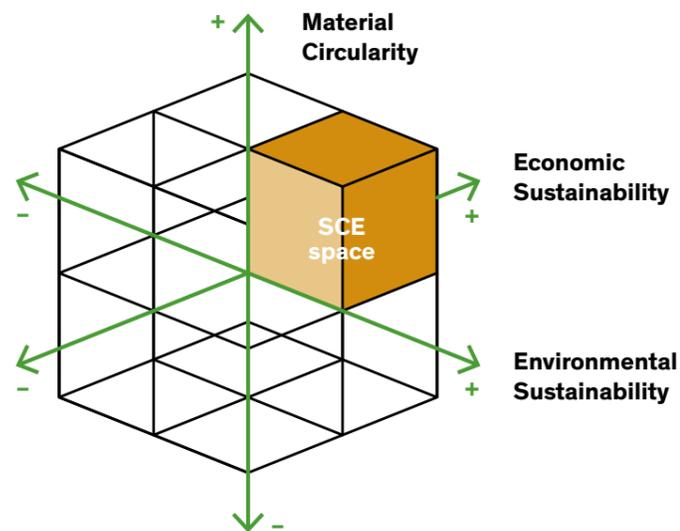


Illustration 1: The Sustainable Circular Economy Space (Blum et al. 2020)

Transitioning to a sustainable CE therefore means **reducing both energy demand and primary material consumption**, and increasing resource utilization within the socio-economic system. It also means that CE should be powered by **renewable energy**.

Business opportunities of a Sustainable Circular Economy

Companies offering sustainable alternatives will gain competitive advantage and huge market opportunities, while benefiting from additional business opportunities, such as:

- 1 Reduced resource dependency** in the context of disrupting value chains and highly volatile resource price. By increasing resource utilization, companies can reinforce their resilience to external shocks.
- 2 Increased competitive advantage** by providing more sustainable products to the market, leveraging cost-saving potentials of product reuse and material recycling, and new forms of customer relationships such as offering services.
- 3 Leveraged innovation potential** and especially high value-added products.
- 4 Aligned business operations with new customer expectations and new public regulations**, e.g. regulations on carbon emissions and product design, extended producer responsibility schemes, waste reduction targets.

Principles, Methods and Tools to Tap into the Opportunities of a Sustainable Circular Economy

Business can be a driving force leading the transition towards SCE. To successfully embrace a SCE, – both internal challenges (e.g. lack of knowledge, risk aversion, shortage of resources, short-term orientation...) as well as external ones (e.g. immaturity of technological solutions, lack of collaboration along value chains, hindering legislations, lack of consumer awareness...) – will have to be addressed. NRP 73 research projects developed principles, methods and tools to lower some of these barriers. The most important ones are the following:

Circularity cannot be implemented without important changes in companies' business models. **Business model innovation for circularity** is therefore a key process once SCE is put on a company's agenda. This innovation process can be guided by an easy-to-navigate framework, consisting of seven steps – from the first impulse to the implementation (see the illustration 2). It contains 40 circular business model patterns helping to identify a financially valuable and attractive solution while simultaneously achieving sustainable resource loops, and a circular canvas that helps assign ideas to the relevant phase of the CE.

The **Retained Environmental Value** allows comparing different circular economic strategies (reuse, repair, recycle...), material choices and other resource efficiency measures in order to identify the environmentally optimal solution. It also supports the monitoring of the transition towards a sustainable CE.

Design decisions have far-reaching influence on the life cycle of products, defining the quantity and quality of materials and the energy needed for production and operation. At the level of products, design allows decreasing the use of primary resources (e.g. life extension, recycled or cascaded materials) and the energy necessary to support the material cycles (e.g. reduced material complexity for easy recycling). Design also influences the way products are used, enabling the success of new business models, as well as end-of-life treatment options, determining the quantity and quality of materials and components that are recoverable.

The **Optimal Environmental Lifetime** allows identifying the optimal replacement strategy and time for products with significant impacts during their use phase, minimizing overall environmental impacts.

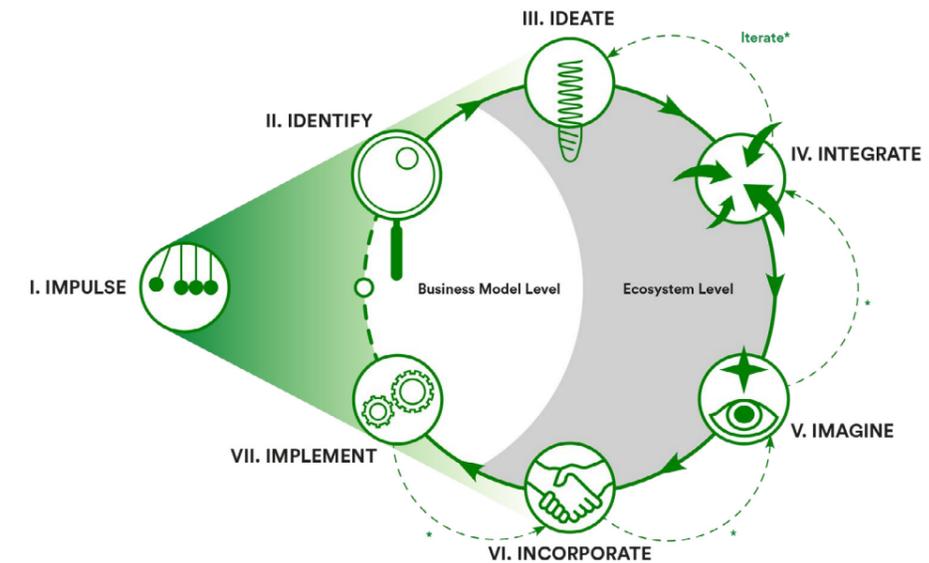


Illustration 2: The Seven Steps of the Circular Navigator (Takacs, Stechow & Frankenberger, 2020)

To develop circular products and services, companies across value chains need to collaborate, as **no company can be circular on its own**. Collaboration and knowledge sharing in the development of circular value propositions can help to maximize CE opportunities.

The development of a **cross-company circular ecosystem** requires from each company to understand its value chain and its possible role in different value chains. It also requires a company to be ready to re-

configure this role and reflect on the implications of a circular transformation both at the level of one organization and at the industry level. In this process of ecosystem building, creating an independent entity for orchestration can help stabilize a new circular value chain and thereby increase the success of the system as a whole. The precondition for changing business models and creating circular ecosystems is to create awareness, openness and willingness within companies, as well as developing new skills for CE strategies.

Conclusion

Companies are facing an increasingly challenging business environment, not least because of the vast environmental perturbations and extreme events that are expected to increase in the coming years. In this context, transitioning to a sustainable circular economy creates both the chance to increase the economic resilience of companies and whole economic sectors, and the opportunities for business to create value for the common good of the whole society.

This transition to a sustainable circular economy is an exciting process full of opportunities for inventing new circular business models and products and services. Business can be a driving force in this process. While no company can become circular overnight, the journey should start now, encompass a long-term perspective and benefit from sound scientific frameworks, methods and tools developed within the NRP 73.

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About NRP 73



www.nrp73.ch

The National Research Programme “Sustainable Economy” (NRP 73) was launched by the federal council with a global budget of CHF 20 million for five years of research starting mid-2017. It funded 29 research projects in different thematic areas such as Circular Economy, Finance, Building & Construction, Cities & Mobility, Forestry, Agriculture & Food, Supply chain, Sustainable Behaviour and Governance. NRP 73 aims at generating scientific knowledge about a sustainable economy that uses natural resources sparingly, creates welfare and increases the competitiveness of the Swiss economy.

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