

From waste management to resource recovery: the waste management sector in the circular economy

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Current global development is characterised by increasing resource use and growing inequalities between the developed and developing parts of the world. Billions of people, mostly in developing countries, legitimately demand further economic growth and therefore increased resource consumption. Emerging scenarios and calculations demonstrate that benefits delivered from resource efficiency alone will not address the demands of this ever-growing demand for raw materials and energy.

Meeting the development needs of the world population and sustaining economic growth with a finite resource base on a planet that is already under stress, comes down to the economy's ability to grow while resource use is declining (Figure 1). The circular economy is a generic term for an industrial economy that, by design or intention, is restorative and eliminates losses. To move towards a circular economy means moving away from our current linear economy (make-use-dispose) towards one where our products, and the materials they contain, are valued differently; creating a more robust economy in the process.

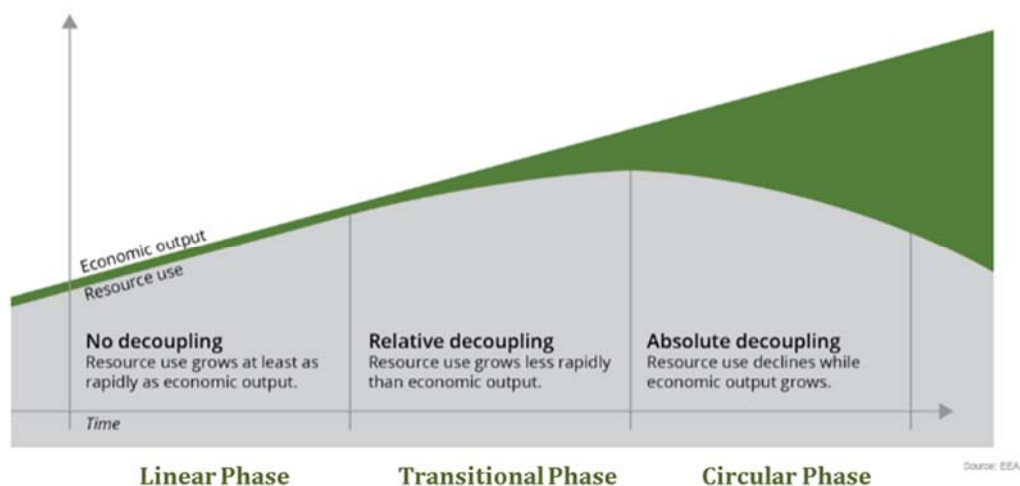


Figure 1: Circular economy and its ability for growth while resource use is declining

The circular economy goes beyond resource and energy efficiency, it closes the loop between resource extraction, production, and disposal, with wastes cycled back into the economy as inputs for production of new products to keep the economy growing while resource use is declining. Circular economy approaches 'design out' waste and typically involves innovation throughout the value chain, rather than relying solely on solutions at the end of life of a product (Figure 2).

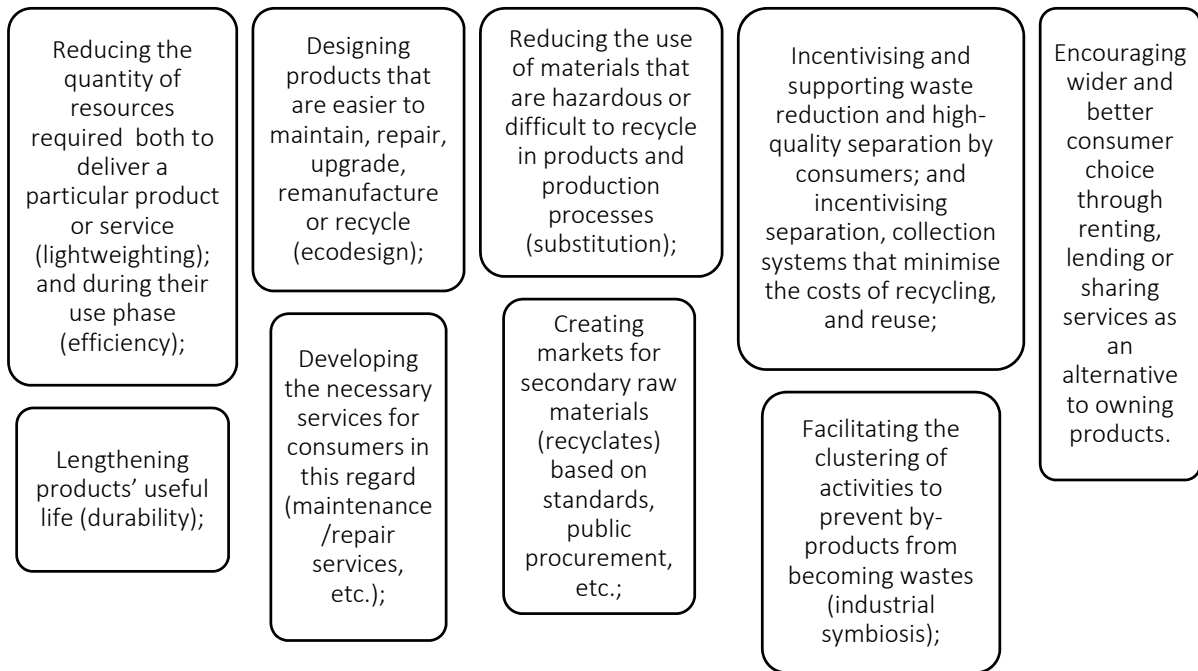


Figure 2: Circular economy characteristics

With the linear economy reaching the limits of the planet's finite resources, circular economy thinking offers promising new perspectives for a renewed social and economic dynamic, where economic growth is balanced with environmental protection and preservation. This paper covers three manifestations of circularity (Figure 3) and looks at the evolving role of the waste management sector in this transition to a circular economy. With challenges in environmental policy increasing in the future, the sector has an important role to play. The paper makes the case for it taking the lead in the management of natural resources cycles.

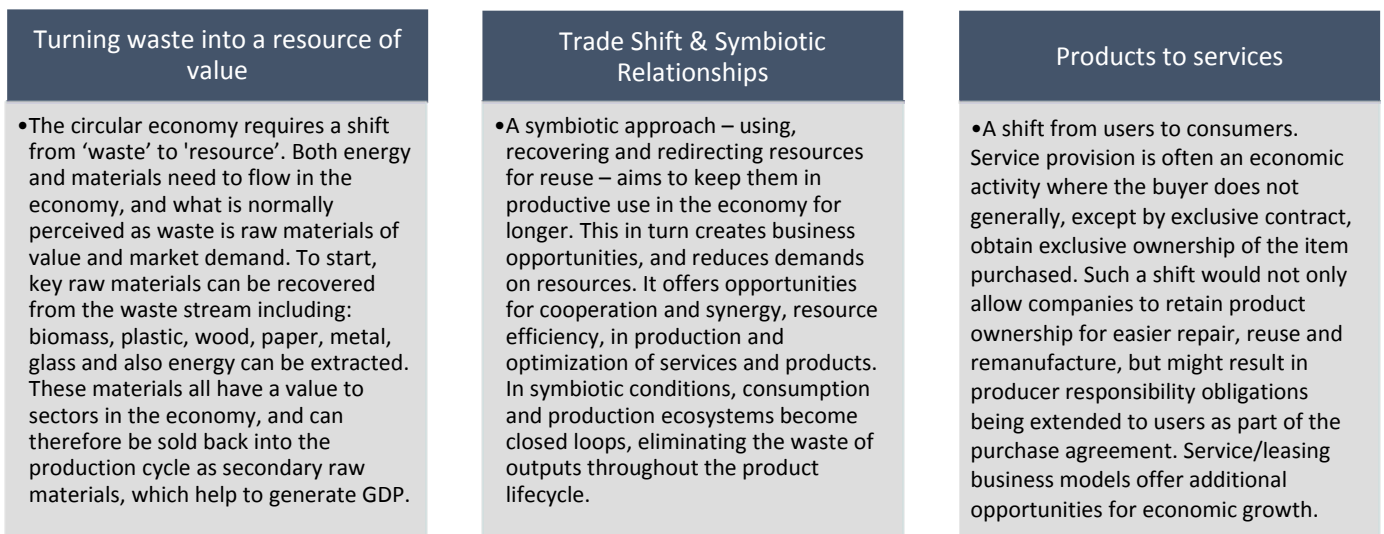


Figure 3. Manifestations of circularity – the way to the circular economy.