



# Asset Management

## Asset Management and the Circular Economy

First Edition  
April 2023

## **About ISO/TC 251**

We are the ISO Technical Committee for Asset Management Systems responsible for the development of the ISO 55000 family of standards. These standards define good practices in Asset Management and requirements for a management system.

Find out more at [committee.iso.org/tc251](https://committee.iso.org/tc251)

Working Group 3 of ISO/TC 251 wishes to thank all members and particularly the following for their input to the writing and review of this article: Maria Aurora Agulló and Ana Luísa Cabrita.

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# The Circular Economy

Sustainability of assets and processes is a major strategic focus area for many companies. To achieve their strategic sustainability goals, several companies have begun to discuss how their businesses are supporting a circular economy.

The linear “take-make-waste” model, the dominant economic model of our time, relies on large quantities of easily accessible resources and energy, and as such is increasingly unfit for the reality within which it operates. As a reference, in 2022 Earth Overshoot Day fell on July 28. This is the date when humanity has used all the biological resources that Earth regenerates during an entire year. Working towards efficiency – reducing the resources and fossil energy consumed per unit of economic output – will not alter the finite nature of their stocks but can delay the inevitable.

The concept of the circular economy has attracted attention in recent years. It is characterized, more than defined, as an economy that is restorative and regenerative by design and which aims to keep products, components and materials at their highest utility and value at all times, distinguishing between technical and biological cycles. It is conceived as a continuous positive development cycle that preserves and enhances natural capital, optimizes resource yields, and minimizes system risks by managing finite stocks and renewable flows. It works effectively at every scale.

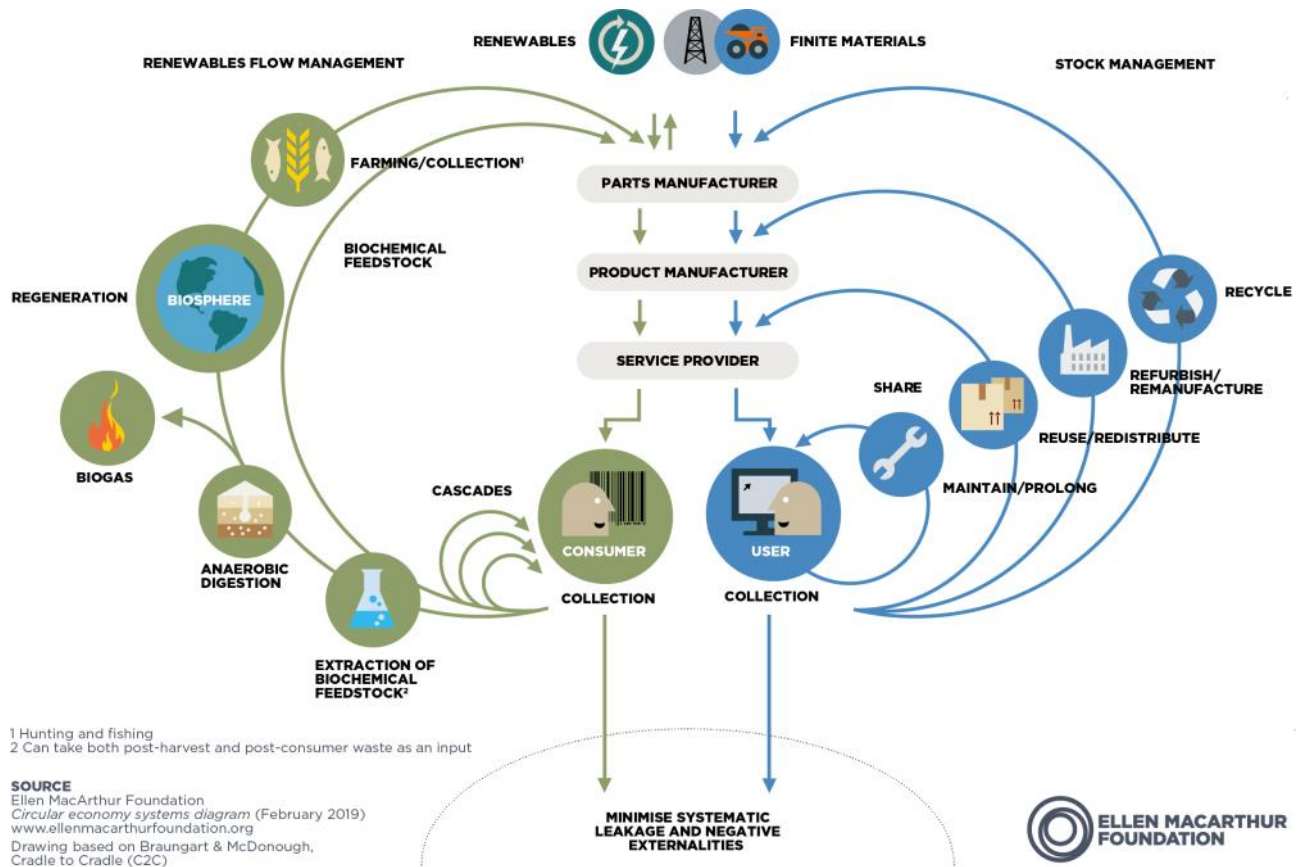


Figure 1: The Circular Economy – an Industrial System that is Restorative by Design (Ellen MacArthur Foundation)

The circular economy offers a major opportunity for the financial sector to deliver on climate commitments and other ESG objectives, whilst tapping into sources of new and better growth and long-term value creation. Circular economy strategies can lower investment risk and drive superior risk-adjusted returns.

## Principles of the Circular Economy

The circular economy is based on three principles, driven by design:

### 1) Eliminate waste and pollution

Currently, our economy works in a take-make-waste system. We take raw materials from the earth, make products from them, and throw them away as waste. Much of this waste ends up in landfills or incinerators and is lost. This system cannot work in the long term because the resources on our planet are finite. The extension of the life cycle of materials/products/equipment reduces the need for extraction of material from nature, optimizes its use, and reduces waste production, minimizing environmental impacts.

### 2) Circulate products and materials (at their highest value)

This means keeping materials/products/equipment in use, either as a product or, when that is no longer possible, as components or raw materials. In this way, nothing becomes waste, and the intrinsic value of products and materials is retained. The most effective way of retaining value is to maintain and reuse them. For products to successfully be circulated in either the biological or the technical cycle, it is essential they have been designed with circularity in mind.

### 3) Regenerate nature

By moving from a take-make-waste linear economy to a circular economy, it's possible to support natural processes and leave more room for nature to thrive, shifting the focus from extraction to regeneration. Instead of continuously exploiting and degrading nature, it is built on natural capital. If we move to a regenerative model, we begin to emulate natural systems. There is no waste in nature.

## Benefits of a Circular Economy

A transition towards the circular economy can bring about the lasting benefits of a more innovative, resilient, and productive economy:

- Substantial net material savings
- Reduced exposure to price volatility of raw materials
- Increased economic development
- Increased innovation and job creation potential
- Increased resilience in living systems and the economy

Organizations that plan to protect their future should include sustainability aims within their strategic goals.

## Asset Management and the Circular Economy

An Asset Management approach that balances costs, opportunities, and risks against the desired performance of assets is critical to achieving these goals.

Asset Management is the art and science of making decisions to optimize the delivery of value against established organizational objectives. It is a key enabler and platform to inform business strategy for “designing in” strategic asset value, optimizing the life cycle, reducing whole-life costs and environmental impact of assets. It is a means to invest in, plan and maintain the value of assets within a circular economic context. By using Asset Management principles to adapt their business models, organizations can move toward closed-loop systems that optimize the performance of assets whilst extending asset life.

The circular economy in Asset Management should consider assets as material resources, maintaining, for as long as possible, a maximum number of materials/pieces/components and, in any case, renewing them, prioritizing their repair, reuse, and recycling. Minimizing the use of resources, closing resource loops, and improving durability, performance and lifetime are all measures that should be promoted under a lifecycle management perspective that strongly contributes to a circular economy.

Lifecycle thinking in Asset Management starts with the design stage, where important decisions can be made regarding recyclability and reuse of materials during and after the useful life of assets. For many organizations assets relate to the major use of material resources and therefore Asset Management can provide a major contribution to the preservation of resources. Many assets have a long lifecycle measured in decades, which makes it very important to make conscious decisions in the early lifecycle stages because these may have environmental consequences over a very long period.

The alignment of Asset Management with circularity is oriented to preserving environmental quality, contribute to a resilient and regenerative society, economic prosperity, and social equity, for the benefit of current and future generations, while also offering the opportunity to generate better financial and competitive returns.



*Figure 2: The Circular Economy Model  
(European Parliament)*

*Note: ISO is currently developing a series of standards on the circular economy. More information can be found at <https://www.iso.org/committee/7203984.html>.*