

EU4Energy project: Circular Economy – A Way to Sustainable Use of the Resources



The Circular Economy is an economic system based on the reuse and regeneration of materials or products, especially as a means of continuing production in a sustainable and environmentally friendly way. It is based on three principles, driven by design: eliminate waste and pollution, circulate products and materials (at their highest value), and regenerate nature.

Energy and the circular economy are closely related concepts that can have a significant impact on each other. The aim of circular economy is to initiate transition from a traditional linear "take-make-dispose" model of production and consumption to one that focuses on resource efficiency, waste reduction, and the continual use of materials within a closed-loop system. Energy plays a vital role in enabling and driving this transition by shifting away from fossil fuels and adopting renewable energy sources. Renewable energy aligns with the principles of the circular economy as it is sustainable and can be continuously replenished. By investing in renewable energy systems, businesses and communities can reduce their reliance on finite resources and decrease greenhouse gas emissions.

In a circular economy, the goal is to create closed-loop systems where products, components, and materials are recycled, reused, or repurposed at the end of their life cycle. Energy is required throughout

these processes, such as in the collection, sorting, and recycling of materials. Additionally, energy is needed for remanufacturing or refurbishing products to extend their lifespan. By using energy-efficient methods during recycling and reprocessing, the circular economy can maximize resource recovery and minimize energy consumption. Replacing fossil fuel generation is just one way to apply circularity principles to a company's value chain. Complete circularity creates systems in which all materials enter a continual cycle, thus decoupling economic activity from the consumption of finite resources.

For example, recycling iron and steel and aluminium leads to large energy savings compared with the primary production of those metals. Aluminium, steel and copper, for example, are almost 100% recyclable. Indeed, producing aluminium from recycled products requires only 5% of the energy needed to produce primary metal.

The circular economy promotes the efficient use of resources, including energy resources. By optimizing energy use, minimizing waste, and improving energy efficiency in production processes, businesses can reduce their resource consumption and environmental impact. For example, using energy-efficient machinery and technologies can minimize energy losses and decrease the need for extracting and processing raw materials.

The EU has been pursuing a transition to a circular economy in earnest since 2015, with the launch of the first EU Circular Economy Action Plan. By 2019, the 54 actions contained in that Action Plan had been delivered (with some work still ongoing), and in March 2020 the European Commission adopted a new Circular Economy Action Plan (CEAP), with the following objectives:

- Make sustainable products the norm in the EU;
- Focus on sectors that use most resources with high potential for circularity, such as: electronics and ICT, batteries and vehicles, packaging, plastics, textiles, construction and buildings, food, water and nutrients;
- Ensure less waste: reduce total waste generation and halve the amount of residual (non-recycled) municipal waste by 2030;
- Empower consumers and public buyers;
- Make circularity work for people, regions and cities; and
- Lead global efforts on circular economy.

The CEAP announced 35 specific actions to be taken by the EU in support of these objectives, which the European Commission has been progressively delivering since 2020. Some have already been adopted, others proposed by the European Commission but not yet adopted, and others yet to be tabled. In addition to the CEAP, the 2019 European Green Deal also provides a framework for EU action relevant to the circular economy transition. The Green Deal is the EU's strategy to promote growth whilst also responding to climate and environment related challenges, transforming the EU into "a fair and prosperous society, with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use". The Green Deal contains 47 actions, many of which are also of key relevance to the circular economy transition.

The EU has been developing a comprehensive framework to support the transition to a circular economy. This framework encompasses various types of initiatives, including:

- Regulatory initiatives: These are legislative measures that undergo the EU policy-making process, typically in the form of regulations or directives.
- Strategic/overarching initiatives: These initiatives outline the future policy direction for specific areas or topics, providing guidance for future policy developments.
- Voluntary initiatives: These are non-binding initiatives that encourage voluntary actions and commitments without legal obligations.



Ecodesign

The Ecodesign Directive (2009/125/EC) is currently being revised to promote environmentally sustainable and circular products. It originally focused on energy-using and energy-related products but will now expand its scope to cover a wider range of products.

In 2022, the European Commission proposed an overhaul and expansion of the Ecodesign Directive to establish the new Ecodesign for Sustainable Product Regulation (ESPR). The goal is to ensure that all products entering the market are environmentally sustainable, aligning with the EU's objective of climate neutrality by 2050. The ESPR will cover not only energy-related products but also work towards making products as a whole more environmentally sustainable and circular. The new directive will introduce more requirements in areas such as product durability, reusability, upgradability, reparability, energy and resource efficiency, recycled content, remanufacturing and recycling processes, the presence of inhibiting substances, and carbon and environmental footprints.

Best available techniques (BAT)

The Industrial Emission Directive (IED) already came into force in 2011. The IED aims to reduce harmful industrial emissions into air, water and soil across the EU through better application of Best Available Techniques (BAT). The IED covers around 50,000 larger industrial businesses that are required to operate in accordance with a relevant permit.

With the objective of the EU to reach a zero-pollution level by 2050, the Directive is now under revision. The proposals aim to improve the Directive by increasing the focus on energy, water and material efficiency and reuse, in addition to promoting the use of safer, less toxic or non-toxic chemicals in industrial processes. The revised Directive on industrial emissions will:

- Ensure full and consistent implementation of the IED across Member States, with tighter permit controls on air and water emissions;
- Increase investment in new, cleaner technologies taking into account energy use, resource efficiency and water reuse whilst avoiding lock-in to obsolete technologies;
- Support more sustainable growth of sectors that are key to building a clean, low carbon and circular economy;
- Cover additional intensive farming and industrial activities, ensuring that sectors with significant potential for high resource use or pollution also curb environmental damage at source by applying Best Available Techniques;
- Establish an Innovation Centre for Industrial Transformation and Emissions;
- Integrate the previously separate requirements for depollution and decarbonisation so that future pollution control investments take better account of greenhouse gas emissions, resource efficiency and water reuse.
- Enhance data transparency and public access to environmental information by making permit summaries available online and providing more opportunities for public participation in the setting and review of permits.

Green public procurement

Green Public Procurement (GPP) is defined in the Communication (COM -2008- 400) and although GPP is a voluntary instrument and Members States are able to determine the extent to which policies or criteria are applied, it plays a key role in the EU's efforts to boosting a circular economy.

GPP is within the framework of Strategic Public Procurement, together with Socially Responsible Public Procurement (SRPP) and Innovation Procurement. The basic concept of GPP relies on having clear, verifiable, justifiable, and ambitious environmental criteria for products and services, based on a life-cycle approach and scientific evidence base.

Furthermore, following the adoption of the 2020 Circular Economy Action Plan, the Commission is proposing minimum mandatory GPP criteria and targets in sectoral legislation and phase in compulsory reporting to monitor its uptake.

Ecolabelling

EU Ecolabel is the only EU-wide ISO 14024 Type I ecolabelling scheme. Recognised throughout Europe, it is multi-criteria and tackles the main environmental impacts of products along their full lifecycle, from extraction of raw material to disposal.

Ecolabels can play a particular role in developing technical specifications and award criteria (related to GPP), and in verifying compliance helping public buyers to save time in accordance with Public Procurement Directive.

Waste Framework Directive

The Waste Framework Directive and the Landfill of Waste Directive were amended to improve the recycling and reduce landfilling of municipal waste. The updated Waste Framework Directive requires member states to establish waste prevention programmes which, must contain at least the following type of measures: Encouraging the manufacture and design of resource-efficient, durable, repairable, reusable and upgradable products; Ensuring the conservation of critical raw materials; Encouraging the re-use and repair of products, including the availability of spare parts and manuals; Reducing industrial waste in extractive, manufacturing and construction sectors; Reducing food waste and fostering food donation; Reducing the content of hazardous substances in products as well as the generation of waste that cannot be reused, repaired or recycled; Identifying and preventing the main sources of harmful environmental littering, especially marine litter; Developing awareness-raising campaigns about littering and waste prevention.

The European Green Deal recognises the importance of industry for a transition to a climate neutral and circular economy highlighting in particular the role of key energy-intensive sectors, such as steel, chemicals and cement. It emphasizes the importance of new business models to ensure low-emissions technologies, services and products. Additionally, it notes the challenges of the green and digital transition highlighting the importance of the circular economy performance of the sector.

Circular Economy in Bosnia and Herzegovina

Although the transition to CE in BiH is in its very early stages, the number of companies that integrate certain elements of circularity in their operation, as well as the diversity of their business models and ideas, are encouraging.

Despite the inclusion of terms and specific measures in its strategic framework to promote the circular economy in the business sector, BiH still faces challenges in transitioning business operations to the circular economy model. According to a survey, one-third of businesses in the WB region are uncertain if their current business model allows for this shift. Additionally, another third either do not consider transitioning to the circular economy or believe it would be difficult without adequate incentives. From a business perspective the key constraints to move towards circular economy model are the additional cost (46% of respondents claimed), lack of skills and expertise (16%), lack of a regulatory framework (15%), lack of government subsidies (14%) and lack of consumer demand (9%).

Financing mechanisms for developing green and circular business models are a relatively new concept in BiH, with domestic institutions gradually adopting them in recent years. International financial institutions (IFIs) and donors have been at the forefront of providing support for financing green business models in BiH. EBRD, KfW, EIB, and Finance in Motion are some of the leading IFIs providing support through dedicated credit lines. These credit lines guide the investment of funds in green and circular business models, based on specific financing criteria. In addition to credit, some of these financing options also provide a grant component for technical assistance to companies in preparing project documents. The majority of investments are aimed at energy efficiency and renewable energy projects, as expected given

the EU carbon border adjustment mechanism, which will affect the export performance of certain industry groups as well as the current energy crisis.

A lack of sufficient access to capital presents an important barrier to business growth and technology acquisition in the country. Policy measures need to be based on providing sufficient and subsidized financial resources in line with best practices. Apart from already mentioned IFIs, two entity ministries - the Federal Ministry of Development, Entrepreneurship and Crafts, and the Ministry of Economy and Entrepreneurship of the Republika Srpska - are key institutions responsible for supporting the development of small and medium-sized enterprises (SMEs) in BiH. The Development Bank of the Federation is also actively involved in this area through dedicated credit lines. All of these institutions have support programs that include components related to green and circular business models, to varying degrees.

The topic of circular economy is perceived in the EU4Energy project within the energy field (i.e. eco-design, energy labelling) and the Project works on establishment of the green and circular business dialogue, and also exploiting the green and circular business opportunities targeting the specific opportunities for BiH that are, or potentially will be triggered by new markets opening for green and circular business opportunities.

