

Effectiveness of Public-private relationships in  
Europe's transition from a Linear Economy to a  
Sustainable Circular Economy



**CIRCULAR ECONOMY  
ACTION PLAN**

**The European  
Green Deal**

GROUP 5

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## **Introduction: a circular economy and its benefits**

The global economy has been traditionally organised as a linear model of production and consumption, where raw materials are extracted from the environment to then be transformed directly into finished products to be sold on the market.

This model implies a substantial waste of those products, which are thrown away as soon as they are considered no longer useful or desirable, without considering the long-term consequences. Indeed, linear models of production entail a high level of use of those resources, but especially an important production waste impacting greatly our environment.

However, environmental concerns have been growing and supported by numerous pieces of legislation, especially within the context of the European Union's Green Deal agenda. More and more, new methods and ideas are emerging to reduce resource depletion and environmental degradation.

The concept of circular economy emerged as an obvious response to environmental issues and gained more and more prominence. Parallel to the linear and traditional model of production, it can be defined as a system which maintains the value of products, materials and resources in the economy for as long as possible, and minimises the generation of waste. It focuses on the efficiency of resources and the reduction of waste, by reusing, repairing, remanufacturing or recycling different products that would have been thrown away in normal times. It aims to imitate "nature" where everything has a value and is used, and where waste becomes a new resource. This idea draws inspiration from diverse schools of thought mixing economic perspectives with industrial ecology and biomimicry. It is through his report in 1976 that W. Stahel came up with a new vision of an economy in loops. His approach focused on the potential for substituting manpower for energy, job creation, economic competitiveness, resource savings, and waste prevention. Adding to this, J. Benyus's concept of Biomimicry focused on nature's pattern and strategies to solve human challenges. This new vision of our economy came along with numerous other great aspects.

Environmentally speaking, circular economies have important benefits. Firstly, they allow a reduction in greenhouse gas emissions, pollution and biodiversity loss by avoiding the extraction and production of raw materials but reusing the ones already present. According to European Environment Agency reports, this economic model could help reduce pollution through the promotion of resource efficiency and waste prevention. As an example, recycling and reusing materials instead of intensifying production can help with reducing pollution levels. They can also have an important impact on mitigating biodiversity loss by reducing the pressure on natural ecosystems caused by resource extraction and waste generation. The extension of the life cycle of products and materials helps conserve ecosystems and biodiversity.

Moreover, circular economies help reduce dependence on imported raw materials, improving the security of supply and making countries less vulnerable to supply chain

disruptions. By keeping materials through practices like recycling, countries do not need as many resources as before and can then reduce their reliance on other countries to obtain sources for raw materials. In the context of trade conflicts or geopolitical tensions, countries would then be less impacted by the decrease in the availability of certain imported materials. Through the promotion of local sourcing, countries can build more resilient and sustainable supply chains. More importantly, they have major economic, and social implications but also benefits. They lead to the creation of new business models and increase competitiveness. For instance, companies can offer products to customers through renting and sharing arrangements rather than selling them outright. It provides an incentive for the company to design products which are recyclable and durable to maintain and reuse them.

Firms can become more competitive by being more cost-efficient, as they would need fewer raw materials for the creation of their products. Additionally, this model stimulates innovation, boosts economic growth and creates numerous job opportunities. Indeed, according to the European Parliament, its implementation could lead to the creation of an additional 700,000 positions in the European Union alone by the year 2023. It also promotes sustainable consumption and production patterns, enhancing global social well-being.

However, it will not impact all sectors in the same way. Some sectors, such as the energy-related sectors, will be extremely impacted by the circular economy transition, as aligning circular economy principles with sustainable energy goals can accelerate the energy transition and create opportunities for cities to enhance their energy systems. On the contrary, some other factors will face numerous challenges in adapting to this new model. Indeed, the sector most impacted will be one of textiles as it tends to struggle with end-of-use products, which often end up in incineration. The promotion of sustainable practices throughout the textile value chain can be challenging due to existing consumption patterns and waste management practices.

Despite the challenges in certain industries, this strategy has been prioritized by the European Union as a key to achieving green recovery climate mitigation and sustainable development. In 2015, the European Commission adopted an ambitious circular economy action plan composed of 54 measures touching the entire lifecycle of products. This had for aim of accelerating the EU transition towards a circular economy. Indeed, the European Union is even more affected, as it generates more than 2.2 billion tonnes of waste every year, implying the need to reduce waste to a minimum.

### **Transition of the EU from a linear to a circular Economy**

The European Union recognizes the limitations of the traditional "take-make-dispose" linear economic model and its impact on resource reduction and waste generation. To address these concerns, the EU is actively transitioning towards a circular economy, through the application of the Circular Economy Action Plan, a comprehensive strategy launched in March 2020 by the European Commission.

The Action Plan prioritizes promoting sustainable product design to extend product lifespans. The Plan's initiatives aim to promote more sustainable product design, reduce waste and empower consumers, for example by creating "the right to repair", a right that can empower consumers, a key aspect in facing this issue. This right tackles obstacles that discourage consumers from repairing due to inconvenience, lack of transparency or difficult access to repair services.

Furthermore, the EU recognizes that certain sectors require particular attention due to their resource intensity. The Action Plan focuses on electronics and ICT, plastics, textiles, and construction. For instance, the proposal for new packaging regulations aims to reduce waste by promoting reusable and recyclable designs, with labels that are clear to the consumers. Additionally, the plan encourages the development of bio-based, biodegradable, and compostable alternatives to traditional plastics.

The European Parliament actively supports the transition. In February 2021, it adopted a resolution on the new circular economy action plan demanding additional measures to achieve a carbon-neutral, environmentally sustainable, toxic-free and fully circular economy by 2050, including tighter recycling rules and binding targets for materials use and consumption by 2030.

One year later, in 2022, the Commission released the first package of measures to speed up the transition towards a circular economy, as part of the circular economy Action Plan. Boosting sustainable products, empowering consumers for the green transition, reviewing construction product regulation, and creating a strategy on sustainable textiles are some of these measures. Also, that same year, the Commission proposed new EU-wide rules on packaging. It aims to reduce packaging waste and improve packaging design, with for example clear labeling to promote reuse and recycling; and calls for a transition to bio-based, biodegradable and compostable plastics.

The EU's ongoing efforts with the Circular Economy Action Plan demonstrate a strong commitment to moving away from the linear model. The success of this transition will rely on continued collaboration between the EU, member states, businesses, and citizens. By prioritizing sustainable design, empowering consumers, and focusing on resource-intensive sectors, the EU is paving the way for a more resilient and environmentally responsible future.

### **Public-Private relationships in the EU**

A Public-Private Partnership (PPP) is an arrangement between private companies or investors and public entities, such as government or local authorities. The main purpose of these partnerships is to try and optimize the results of projects which would have otherwise failed under the sole surveillance and responsibility of the public sector. Additionally, PPPs can

drive advanced research and development (R&D) efforts that wouldn't have been possible if not for the private sector collaborating with the public one. In a traditional PPE, the private party assumes responsibility for financing, designing, building and maintaining the infrastructure or service. In return, the public party provides various guarantees, such as stable revenue streams, but may also contribute to the funding. The risks and rewards of the projects are usually shared among the two sectors. In fact it is said that PPPs take the form of Joint Undertakings (JUs).

These partnerships are fundamental for the EU as they allow the Union to pool its resources and try to tackle bigger challenges collectively. Agreements of this sort can also stimulate competitiveness and provide high-quality jobs while also encouraging more private investment in R&D.

While the public-private partnership market had suffered after the COVID-19 pandemic, there has been an increase of the PPP in 2022 indicating that, despite uncertainty and volatility in construction prices, this market has been recovering. The transport sector is the primary area in which PPP contracts are concluded, followed by environment and education.

The emphasis the EU puts on these arrangements is due to all the benefits that come with them. These projects allow for better collaboration among the society as a whole, and the potential to optimize efficiency throughout the community. This can improve the link between the research and the society by, as mentioned before, stimulating interest in investments in different sectors.

## **Contradictions**

The article has so far explored the potential role PPPs can play in Europe's transition from a linear economy to a circular economy. Although it is clear that with effective planning, coordination, and distribution of funds, PPPs can expedite the agenda for sustainable projects, the limitations should also be considered. In the EU context, it is sufficient to select sample projects in the union's borders and investigate to what extent the projects are benefitting particularly from the PPP arrangement.

One such instance is Special Report No. 9 produced in 2018, which conducted an analysis of the PPP principle applications in various European projects. These analyses were done independently from the respective projects' management, in the form of audits. Various investigations revealed that the benefits mentioned in the report were actually reaped, which means that the PPP arrangement was in fact successful. However, some audited PPP projects were found to be managed ineffectively and did not provide adequate value for money. The projects suffered delays, cost increases and were under-used, and resulted in 1.5 billion euro ineffective spending, out of which 0.4 billion euro EU funds.

It is natural to question the root causes of the inefficiencies pinpointed during the audits. According to the report, reasons include the lack of adequate preliminary analyses, strategic approaches towards the use of PPPs, and institutional and legal frameworks that exist in the EU and national jurisdictions. Moreover, it is important to note that many member states lack the experience and expertise in implementing PPP projects. One of the projects investigated was a motorway construction in Greece. It was found that the cost per km of three assessed motorways had increased by up to 69%, while at the same time the project scopes were reduced by up to 55%. In Greece's case, this was mainly due to the financial crisis and poorly prepared projects by the public partner, resulting in premature and insufficiently effective contracts with private concessionaires.

It should be noted that this report's scope did not limit itself to sustainability projects. The aforementioned example of the Greek motorway project does not fall under the category of a sustainability project. In any case, project limitations noted in traditional projects can be extrapolated to sustainability projects as well. In fact, sustainability projects designed with a PPP arrangement are likely to also have shortcomings that traditional projects would not have. For instance, as climate technologies emerge and are wanted to be utilized in PPPs, the issues of inadequate preliminary analyses and inexperience with the project technologies will most likely intensify.

### **Additional Examples**

The success and speed of the EU's attempt to transition into a circular economy depend on many factors. Availability of funding, members' lenience to sustainability, and personnel training in sustainable methods and technologies, are some examples. The EU already has sustainable PPP projects in place that aim to mitigate costs and lower barriers that would have arisen without the reciprocity between the public and private sectors. Below are four selected projects:

#### **1) Shift2Rail Joint Undertaking**

Shift2Rail JU brings together industry, small and medium-sized enterprises (SMEs), and research centres, aiming to help create a Single European Railway Area. The partnership drives advanced research and innovation solutions that deliver more competitive and resource-efficient European rail.

#### **2) Fuel Cells and Hydrogen Joint Undertaking (FCH JU)**

FCH JU is a public-private partnership between the European Commission, Europe's fuel cell and hydrogen industry and research organisations. Its aim is to accelerate the market introduction of fuel cell and hydrogen energy technologies in Europe to help achieve a carbon-clean energy system.

### **3) Clean Sky 2 Joint Undertaking**

Clean Sky 2 JU develops innovative technologies to reduce aircraft CO2 emissions and noise levels by 2050. The partnership brings together SMEs, research centres universities and industry, creating a very wide and innovative network. It has more than 600 participating entities in 24 countries.

### **4) SESAR Joint Undertaking**

SESAR JU is developing solutions to fundamentally change air traffic management in Europe. The partnership brings together over 100 separate organisations - airport operators, air navigation service providers (ANSPs), manufacturers and industry - to deliver on a Single European Sky

## **Conclusion**

In conclusion, the EU's transition from a linear to a circular economy has been shaped by striving towards sustainability. The EU aims to minimize waste and increase sustainable practices through Public-Private Partnerships which offer a collaborative and efficient approach to tackle this big challenge. While PPPs have the potential to accelerate progress toward sustainability goals, they also pose challenges, as evidenced by some inefficiently managed projects. Thus, moving forward addressing the limitations of the PPPs and ensuring a more effective implementation will be crucial for the success of these sustainable projects.

## **Bibliography:**

“Circular Economy: Definition, Importance and Benefits.” *Topics | European Parliament*, 24 May 2023,

[www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits#:~:text=Moving%20towards%20a%20more%20circular](http://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits#:~:text=Moving%20towards%20a%20more%20circular)

“EUR-Lex - Circular\_economy - EN - EUR-Lex.” *Eur-Lex.europa.eu*,

[eur-lex.europa.eu/EN/legal-content/glossary/circular-economy.html#:~:text=A%20circular%20economy%20is%20a](http://eur-lex.europa.eu/EN/legal-content/glossary/circular-economy.html#:~:text=A%20circular%20economy%20is%20a)

European Parliament. “Circular Economy: Definition, Importance and Benefits | Topics | European Parliament.” *Www.europarl.europa.eu*, 24 May 2023,

[www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits](http://www.europarl.europa.eu/topics/en/article/20151201STO05603/circular-economy-definition-importance-and-benefits)

*Market Update Review of the European Public-Private Partnership Market in 2022*. 2023.

“Public-Private Partnerships - European Commission.”

*Research-And-Innovation.ec.europa.eu*,

[research-and-innovation.ec.europa.eu/research-area/transport/public-private-partnerships\\_en](http://research-and-innovation.ec.europa.eu/research-area/transport/public-private-partnerships_en)

“Special Report 9/2018: Public Private Partnerships in the EU.” *Europa.eu*, 2018,

[op.europa.eu/webpub/eca/special-reports/ppp-9-2018/en/](http://op.europa.eu/webpub/eca/special-reports/ppp-9-2018/en/)