

CIRCULAR ECONOMY - AN INSTRUMENT TO MITIGATE CLIMATE CHANGE

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Abstract

This article examines the impact that the COVID-19 pandemic has adversely affected the global economy and highlighted the need to reshape global supply chains that were complex and interdependent but vulnerable to risk. This shows the opportunity and need to accelerate the transition to the circular economy, which offers viable solutions to most of the structural deficiencies exposed by the COVID-19 pandemic and very high opportunities in terms of competitiveness and long-term reduction of greenhouse gas emissions in value chains. Given that reducing climate change is a matter for all mankind, the opportunity to implement and utilize the functioning circular economy must be a priority for the future.

Keywords: climate change, pandemic impact, circular economy

Classification JEL: Q54, Q456, Q58

1. INTRODUCTION

A whole series of studies have highlighted the inability of the current economic model to cope with a crisis, to mitigate the impact of the Covid-19 pandemic, showing that future shocks will continue to exceed the capabilities of the current system. It is therefore necessary to accelerate the implementation of the circular model in order to mitigate long-term risks and use sustainable fiscal thinking, in order to abandon the current focus on profit and disproportionate growth.

Resilience in the circular model is found in longevity and optimized products, their potential for disassembly and reuse that makes them easier to handle and transform.

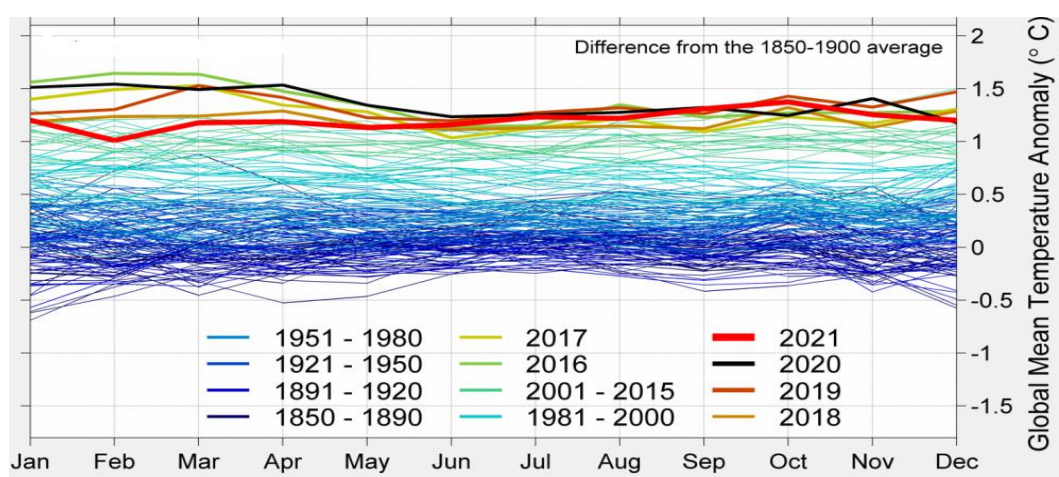
Due to globalization, global endurance cycles have declined. The COVID-19 pandemic has shown that some cycles have had the wrong level of scale, so adopting the circular economy can be seen as a viable solution to reconsider their optimal capacity.

Sustainability in terms of resilience would have a positive and lasting impact, but prosperity cannot be achieved without building resilient systems that promote radical innovation in economic policy and corporate strategy in social and public governance systems.

As the global economy recovers from the COVID-19 pandemic, it has become increasingly clear that there is a strong interconnection between environmental, economic and social sustainability.

2. PANDEMIC IMPACT ON CLIMATE CHANGE

In 2020 there was a reduction in CO₂ emissions by 8%, which in real terms implies an equivalent of ~ 172 billion tCO₂ (compared to ~ 187 billion tCO₂ in 2019). However, it is worrying that despite activity limitations and mobility restrictions, there is still a 92% emission of their initial value (Figure 1).



Source: data from Berkeley Earth, 2021

Figure 1: Changes in Global Mean Temperature

Climate change has often been described as a "ban on the beautiful things in life", but, as shown, a reduction in such a number of beautiful things offers only an 8% reduction in CO₂ emissions.

Consequently, there is a need for a more robust, low-carbon EC model for greater adoption, given the predictions of experts that climate breakdown and not the COVID-19 pandemic will pose the greatest threat. on global health.

International bodies and environmental policies at the country level have highlighted the fact that a significant reduction in GHG emissions can be achieved not only through the transition to renewable sources, but also through growth through the strategies of the circular economy. A well-designed strategy for a circular economy must consider:

- higher value recycling of materials, lower production of primary materials, lower emissions per tonne of material;
- increasing the efficiency of materials by improving production processes, reusing components and designing products with fewer materials;
- circular business models, which involve greater use and longer life of products by design for disassembly, use of long-lasting materials, improved maintenance and remanufacturing that increase the degree of sustainability, could reduce emissions, contributing to the same time to mitigate climate change.

The principles of the circular economy, when adopted in a holistic manner, provide credible solutions to most of the structural deficiencies exposed by the COVID-19 pandemic, with considerable opportunities for competitiveness and long-term reduction of GHG emissions in value chains.

Investing in climate-resilient infrastructure and moving to a circular, low-carbon economy can play a dual role in job creation, while increasing environmental and economic benefits.

3. U.E. REGULATIONS AND INCENTIVES FOR THE TRANSITION TO THE CIRCULAR ECONOMY

On 14 July 2021, the European Commission adopted a package of proposals to make EU climate, energy, land use, transport and taxation policies appropriate to reduce net greenhouse gas emissions by at least 55% by in 2030 compared to 1990 levels. Achieving these emission reductions over the next decade is essential for Europe to become the world's first climate-neutral continent by 2050 and for the European Green Pact to be viable.

Through its proposals, the European Commission presents the legislative instruments to achieve the objectives agreed in the European Climate Law and to fundamentally transform our economy and society for a fair, green and prosperous future.

With regard to the Green Deal, the Commission is considering a border carbon adjustment mechanism, which will set a carbon price for imports of certain products so as to ensure the protection and improvement of the single market and accelerate the transition to the economy. circular by setting the right incentives.

In the analysis of political interventions to accelerate the implementation of the circular economy, six main types of interventions were identified. These refer either to interventions aimed at removing barriers, remedying the market and regulatory failures, or to encouraging market activity.

Some of the identified policy options include education, information and awareness involving the integration of the circular economy and life cycle systems thinking into educational programs supported by communication and public information campaigns, the creation of collaboration platforms, including public-private partnerships with local, regional and national level, encouraging the exchange of information, as well as the value chain and intersectoral initiatives, the establishment of research and development to facilitate discoveries in materials science and engineering, biomaterial systems, etc.

There is also a need for the introduction of sustainability initiatives in public procurement and infrastructure, the provision of business / financial / technical support schemes, such as initial capital expenditures, incentive programs, direct grants and financial guarantees, as well as technical support, training, counseling and demonstration of best practices.

Regulatory frameworks, such as product regulation, extended warranties, and product certificates; waste management strategies, including standards and targets for collection and treatment, collection systems and extended producer responsibility; sectoral strategies and objectives associated with the circular economy.

The pandemic impact has reshaped many economic sectors. Thus, the aviation and tourism sectors were among the most affected sectors from an economic point of view, although with desirable results to reduce the negative impact on the environment. Peer-to-peer (P2P) or sharing economy (e.g. Uber) models, which have given birth to a new generation of service providers and employees, are not resistant to global systemic shocks. The urgency of supply and demand has led to a reduction in freight in favor of air transport whose transatlantic cost / kg has tripled overnight. This is accompanied by job losses, income inequality, mass growth in global poverty levels and economic shocks in industries and supply chains.

The feasibility of working remotely has been tried and tested for certain industries / professions, with the associated impact on reducing commuting for workers, and distance telemedicine /and distance work are generally no longer considered impossible, they have been successfully practiced for much of the period of global isolation.

There has also been a marked reduction in primary energy consumption due to the slowdown and closure of production and economic activities, and distance education is also no longer unknown.

The potential of automation, IoT and robotics in improving production processes, as well as the use of cloud computing and big data analytics in streamlining supplier selection processes and managing relationships with them, as well as logistics, are now better appreciated.

Protectionism and inward-looking policies on exports and tariff reductions / reductions on imports of critical raw materials and metals (PPE) emphasized the importance of cooperation to cope with shortages, which evolved in tandem with profit, thus emphasizing the role / need to help achieve the global production of essentials.

4. ADAPTATION TO CLIMATE CHANGE WITH THE HELP OF THE CIRCULAR ECONOMY

The circular economy is based on reduction, reuse and recycling, and aims to eliminate waste, reduce the consumption of materials, resources and greenhouse gas emissions. Thus, it can be seen that

there is a link between the circular economy and climate change mitigation, and the transition to a circular economy can mitigate carbon dioxide emissions from the extractive industries, manufacturing, construction, transportation and other sectors. In the construction sector alone, the actions of the circular economy are estimated to reduce pollutant emissions by up to 61%.

This potential of the circular economy can be seen in the design of the climate policy action plan, both at Member State and EU level. A notable example of this is nature-based solutions that involve integrating green infrastructure and ecosystem services into the built environment to further increase resilience. For example, trees and green spaces can be integrated into city planning to reduce the impact of heat waves, while managing surface water and biodiversity, as well as improving social values in the built environment. Nature-based solutions can be circular if they use renewable resources, reuse or reuse other resource flows, and avoid unwanted by-products. Nature-based solutions also make circular adaptation measures even smarter by promoting multifunctional areas in cities.

Adapting the built environment in cities can even be a circular strategy in itself, as it can reduce future resource consumption, as climate-induced disasters can cause significant damage to buildings and infrastructure, leading to construction and consumption of new materials, thus causing additional emissions. with greenhouse effect.

5. CONCLUSIONS

The benefits of the circular economy should be obvious, as the three dimensions of social, economic and environmental impact can be mitigated by reduced use of materials, a reduction in waste generation, the expansion of product retention and the design of sustainable products.

The circular economy has the potential to minimize the prevailing pressures and struggles over conflicts due to the unbalanced distribution of resources through participatory forms of governance that involve local stakeholders in resource management initiatives. This can be achieved by adopting a strategy to accelerate the transition to the circular economy, such as closed-loop value chains, in which waste is transformed into resources, not only to reduce pollution but also to help achieve social inclusion goals. .

With sufficient investment in the circular economy, developing countries can outperform their developed counterparts in digital and materials innovation to integrate sustainable production and consumption and low-carbon developments at the heart of their economies. In addition, another benefit of the circular economy as a facilitator of a socially just and inclusive society is its ability to consume more labor due to the variety of end-of-life products and the high cost of automating them.

Thus, the circular economy can create local jobs and "reindustrialize the regions" by substituting labor for local energy, materials and workshops for centralized factories, while stimulating the economy of local repairs and micro-industries.

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