

## **Beyond Boundaries- Circular Economy in Plastics**

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### **Abstract**

Research on plastics has a long tradition. Despite of its versatile nature, its chemical properties specifically non-biodegradable nature of the conventional plastics makes this useful resource a burden on the overall health of the economy. The wastage from the plastics is often being dumped in the land, in the ocean or being incinerated which eventually rises the greenhouse gas emissions and increases the carbon footprints (Plastic Europe). From the year, 2000 until 2019, global plastic waste production doubled, reaching a total of 353 million tonnes. In the plastic industry, single use plastics highlight the difficulties in moving from the linear economy to the circular economy. According to the study conducted b, single use plastics symbolises the concept of linear economy which is all about using the product and later throw it away. A significant portion, approximately two-thirds, originates from plastics with lifetimes of less than five years. Among these, 40% comes from packaging, 12% from consumer goods, and 11% from clothing and textiles. Plastics have become deeply entrenched in daily commerce and exchanges, which in itself is the challenge for the businesses and other entities to decrease its usage because of the fact that their entire infrastructure and operational practices are connected with it.

The lucrative growth of the single use plastic packaging is often associated with its functional characteristics such as its potential in decreasing the transportation costs, supporting firms in exporting, and trading the products as well as protecting food and other items from damage and contamination.

These concerns about waste from plastic, give prompt revival to the unpackaged movement which is about developing new markets and consumer acceptance towards it. Some of the studies offered a mixed perspective about plastics and circular economy and if this unpackaged movement which is about the removal of single use plastics, has any relation with reduced consumption as a concern for circular economy.

Europe generates almost 26 million tonnes of plastic waste each year, and the amount is rapidly increasing. For decades, researchers are trying to find the innovative ideas and technical ways to prevent the world from pollution resulted from plastics. One of the ways to decrease plastics pollution is by considering the concept of circular economy. Even though there is an extensive body of research in the context of circular economy and clean technologies, still there exists a gap when it comes to understanding the development of these concepts in the context of packaging. There is a need to find a way to make plastic packaging production methods less intensive with respect to energy efficiency and material consumption. In addition to that in the literature circular economy and plastics are generally discussed from the social and political perspective instead of technological lens. Therefore, more research is needed to see how plastic packaging how plastic packaging can adapt and integrate new technologies to advance the development of a circular economy.

Hence, this research will try to fill this gap by considering different case studies from the plastic packaging industry. The aim of this study is to better understand the concept of circular economy in plastic industry with the support of cases from the industry. The main focus will be on the new business models particularly on the critical actors involved in these models, who gain who loss, target audience, level of circularity (with respect to R's) and enablers for circular economy.

**Keywords**

Plastic, Packaging industry, circular economy.