

## **Economic and institutional factors influencing the implementation of the circular economy model in enterprises of the manufacturing sector**

### **Popular science summary**

Production of goods is related to energy use and GHGs emissions and is also responsible for the use of raw materials for production. 26% of total raw material consumption in EU-27 in 2007 was related to manufactured products, in USA it was 30%. In 2009 62 Giga tones of minerals were extracted and consumed, of which about one fifth ended up as waste. The shift to sustainable development is crucial to human survival. There is no doubt that economic activity causes a negative pressure on the environment. The circular economy model with material reuse and waste recycling is a possible solution to reduce resources extraction

The scientific goal of the project is to study how the main economic actor, which is the business sector, implements a concept of circular economy, and what are the main incentives and factors affecting companies. Circularity strategies include: refuse, rethink, reduce, reuse, repair, refurbish, remanufacture, repurpose, recycle, recover. In the project, it will be analysed which strategies and how are implemented by enterprises. The second part of the research problem is to gain knowledge which factors influence enterprises to implement circularity strategies, are they influenced by the economic factors as cost reduction or they are more influenced by formal regulations and informal norms. For the analysis, the manufacturing sector was chosen as the most resource intensive next to the energy production and construction sectors. The main research question set in the project is how the manufacturing sector is involved in the implementation of the circular economy concept, and if governmental regulations are effective incentives to do it.

To verify the research hypotheses qualitative (interviews, participant observations, regulations and law analysis) and quantitative (research surveys) methods will be used. Research will be carried out on 4 stages: Stage 1: exploratory research – interviews with representatives of the manufacturing sector and participant observations; the aim is to collect in-depth understanding of implementation of circularity strategies in various manufacturing sections. Stage 2: analysis of formal (regulations) and informal (norms, attitudes) institutions related to environment protection, it is aimed at presenting the institutional framework for circularity strategies implementation. Stage 3: research survey on a sample of manufacturing sector companies, it is aimed at collecting data on sample of about 400 companies, and analysing factors influencing companies and stage of an implementation of circularity strategies. Stage 4: Statistical and econometric analysis of the results

It is expected that the obtained results will allow better understand which factors may support the shift from linear to circular economy model. We are facing serious environmental issues and introducing of new model of an economic activity gives a hope for overcoming current ecological crisis.