# Business sector plastics circularity towards a climate neutral region

## Introduction

Plastic emerges as the leading CO2 emission contributor in Denmark's energy recovery landscape <sup>1</sup>. Specifically, at the regional energy recovery plant in Odense, a significant 60-70% of the total waste originates from the business sector within the Odense Municipality <sup>2</sup>. Notably, the waste from the business sector in Odense, directed to Fjernvarme Fyn between 2015 and 2022, exhibits an average plastic content of 16.6% <sup>3</sup>. This underscores the considerable potential for adopting a circular economy for plastics within business waste streams.

However, despite the growing momentum behind Circular Economy (CE) initiatives, the advancement of such approaches is frequently hindered by prevailing linear mindsets and business models <sup>4</sup>. To overcome these challenges, there is a pressing need to adopt a more comprehensive perspective in implementing CE policies; one that considers both the inter-organizational activities fostering collaboration in a CE and the environmental impact and pressures throughout a regional system <sup>5,6</sup>.

The objective of this research is to

- Generate comprehensive knowledge within implementation of circular economy for plastics
- Identify initiatives, acknowledging the complexity of inter-organizational coordination in a circular economy, leading to resources efficiency and the promotion of plastic circularity in Odense Municipality.

### Project Partners



## **Conceptual Framework**

The framework builds upon connecting MFA, Socio-economic Analysis and Agent-Based Modeling (ABM) for modelling policies and environmental assessment in the context of increasing circularity of plastics within Odense Municipality.



## **Expected Contributions**

- Holistic understanding of the current linear plastic flow from the business sector at Odense Municipality.
- Identification of key interventions and optimization of material flow.
- Design and assessment of policies aimed at enhancing plastic circularity (Informed decision-making).
- Exploring how changes in socio-economic variables influence circularity.
- Quantifiable CE Metrics for monitoring.

The research could contribute to a more nuanced and actionable understanding of the complex dynamics involved in increasing the circularity of plastics.

Further, this approach has the potential to offer practical insights for policymakers, industry stakeholders, and researchers aiming to address waste challenges.

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