Improvement of policies on plastic packaging waste chain from a circular economy approach

➔ Environment and resource efficiency: Objective 4.2: Improving resource efficient economy policies

Summarise your idea in 200 characters

The project addresses the EU challenge of transitioning towards a circular improving policies on municipal plastic packaging waste chain from a circular economy approach in 5 European cities with a different situation in selective waste collection.

Description/Issue addressed

The **European plastic market is not currently aligned with the circular economy** as proposed by the EU Commission (EU Resource Efficiency Roadmap[1]). More than 25.8 million tonnes of plastic waste are produced per year in the EU28[2] (50 kg per EU citizen), with only 29.7% being recycled (39.5% is incinerated, 10.19 Mt; 30.8% is landfilled, 7.95 Mt[2]). This represents a clear gap in the plastic market loop. Moreover, this goes against EU legislation on waste (Waste Framework Directive 2008/98/EC[3], Packaging Waste Directive 2004/12/EC[4], Landfill Directive 1999/31/EC[5]) as it has a high environmental impact (**23.8 Mt of CO_2[6]**) and it represents a clear wastage of resources (€582/tonne of recovered plastic[7]; **losses of €10.56 bn**).

Low recycling rates of plastic mainly come from issues with **packaging waste**. This is the main plastic waste fraction, representing 63%[8] of the total plastic waste generated in Europe (**16.25 Mt**). Additionally, there are specific limitations on recovery because packaging waste is mainly a domestic residue[9] and consequently the quality of the material collected depends on the system of segregation available and the behaviour and environmental awareness of citizens. Moreover, a high variety of polymers are collected together (i.e. LDPE, HDPE, PP, PS, EPS, PVC, PET, ABS, ASA, SAN, PMMA, PA, PC, PUR[10]) causing further issues. Due to this, only 34% of **packaging waste is recycled in in Europe[11] (5.04Mt landfilled, 5.69Mt incinerated).**

The improvement of domestic packaging waste collection and treatment is a key factor for guaranteeing the circular economy of plastics, and should be even higher in **Eastern and Southern** Europe where packaging recycling rates are lower[12]. In **Central and Northern Europe** the challenge is to develop value-added applications for the packaging fractions currently not properly valorized (i.e. PP, PE film, EPS, plastic mixes).

PlastiCircle aims to develop and implement a holistic policy process to increase packaging waste recycling rates in 5 European regions. This will allow **plastic waste to be reprocessed in the same value chain** (i.e. **Closure of plastic loop**). This is aligned with the stricter objectives being established by the European Commission (**Circular Economy Package[13]**; objective to recycle 75% of packaging waste by 2030)

[1] European Commission, 2014. The Roadmap to a Resource Efficient Europe. Web: http://ec.europa.eu/environment/resource_efficiency/about/roadmap/index_en.htm
[2] PlasticsEurope, 2015. Plastics – the Facts 2015 An analysis of European latest plastics production, demand and waste data. /
[3] Waste Framework Directive 2008/98/EC. Web: http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098
[4] Packaging Waste Directive 2004/12/EC. Web: http://ec.europa.eu/environment/waste/packaging/legis.htm
[5] Landfill Directive 1999/31/EC. Web: http://ec.europa.eu/environment/waste/landfill_index.htm
[6] Own calculation based on ELCD Databasis used for Life Cycle Assessment: 0.07kg CO2/kg plastic waste landfilled and 2.28 kg CO2/kg plastic waste landfilled
[7] Prices of recycled plastics (LDPE, HDPE, PP, PET, PS). Plastiker. January 2016. Web: www.plasticker.de
[8] PlasticsEurope, EuPC, EuPR, EPRO and Consultic (2009). The Compelling Facts about Plastics - An analysis of European plastics production, demand and recovery.
[9] 63% of the total packaging waste is collected through the domestic stream according to Plastic packaging waste statistics 2012. Web: http://www.recoup.org/news/7194/plastic-packaging-waste-statistics-2012-34-recycling-35energy-recovery-and-31-landfill
[10] LDPE-Low Density Polyethylene; HDPE-High Density Polyethylene; PP-Polypropylene; PS-Polystyrene; EPS- expandable Polystyrene; PVC- Polyvinyl chloride, PET- Polyethylene terephthalate, ABS-Acrylonitrile butadiene styrene, ASA- Acrylonitrile Styrene Acrylate, SAN-Styrene-acrylonitrile, PMMA- Polymethyl methacrylate, PA- Polyamide, PC-polycarbonate, PUR-Polyurethane.
[11] Plastic packaging waste statistics 2012. Web: http://www.recoup.org/news/7194/plastic-packaging-waste-statistics-2012-34-recycling-35energy-recovery-and-31-landfill
[12] EuroStat, 2013. Web: http://ec.europa.eu/eurostat/tgm/refreshTableAction.do?tab=table&plugin=1&pcode=ten00062&language=en
[13] Circular Economy Package. Web: http://ec.europa.eu/environment/waste/target_review.htm

Partners involved

➔ ITENE: Advisory and communication partner, expert on packaging and waste valorisation

Type of partner looking for

➔ Regional government body from Valencia region (meeting this week)
➔ 4 Regional authorities with direct influence on waste policies or managing authority from the following regions:
   o East of Europe (Alba Iulia city could be interested)
   o North of Europe
   o Central Europe
➔ POLITO, University of Torino (lead of previous Interreg project).

Main policy instruments addressed

2 options:

1. integrated waste management plan of the region of Valencia. PLAN INTEGRAL DE RESIDUOS DE LA COMUNITAT VALENCIANA (PIRCV). Not a ESIF (growth in jobs) or related ETC programmes
2. RIS3-CV - operational programme (ETC)➔ very indirectlely

Quality of life. Agri-food, cosmetics and household products. Sustainable use of resources.	1. Manufacturing & industry 2. Rubber & plastic products	1. Manufacturing & industry 2. Food, beverage & tobacco products	1. Sustainable innovation 2. Resource efficiency

Planned activities and approach to policy-learning

PlastiCircle will improve the Circular Economy of Plastics (Closure of the European Plastic Loop) working on generating knowledge and policies for the **reintroduction of packaging** to **the plastic value chain**. The PlastiCircle approach is based on innovation policies in the four stages associated with plastic packaging treatment: **collection, transport, sorting and recycling**.

During the project, the local and regional authorities will exchange experiences and policies for efficient and sustainable management of packaging municipal waste in all the chain (closing the loop). The project will examine through interregional meetings identifying good practices how best regional and local authorities can improve relevant policy instruments and design support packages to assist regions and plastic industry in entering the circular economy by reintroducing packaging waste in the plastic value chain. All the actors in the plastic value chain are involved in the project, including **industries** (i.e. waste managers, plastic producers/converters, equipment) and **public bodies** (i.e. associations, municipalities, legal bodies). The system will design the best collection procedure to improve the quality/quantity of packaging waste (involvement of **citizens**).

Exchange of experience are expected in 4 main target groups: **collection, transport, sorting and recycling.** Stakeholders from all these stages will be invited. Communication and dissemination activities will be carry out in these areas.

➔ **Collection**: identify the quantity and quality of plastic packaging generated by each family/citizen, with a view to implementing compensation policies to encourage optimal collection ("the better you separate, the less you pay" approach).

➔ **Transport**. To develop, integrate and validate policies on the transport system to optimize collection routes, maximizing the amount of plastic waste transported per route, promoting efficient driving.

➔ **Sorting**. To develop, integrate and validate best practices in sorting process for separating plastic waste into the optimal fractions to be subsequently recovered.

➔ **Recovery**. To develop and validate best practices aimed to industry to manufacture new products based on the fractions previously sorted from packaging waste.

Phase 1 will be dedicated to a policy-learning process including case-studies, personal interchange, peer reviews, expert panels and collaboration with key stakeholders. Its final outcome will be an Action Plan for each participating territory. In Phase 2, these plans will be realised within each region institutional setting.