PLASTECO
Interreg Europe

European Union
European Regional
Development Fund

INPUT PAPER FOR THE INTERREGIONAL WORKSHOP

ON HOW TO SUPPORT REGIONAL BUSINESSES TO INVEST ON ECO-INNOVATION IN PLASTIC PRODUCTION AND REUSE

PLASTECO activity 3.2a

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JANUARY 2021

Final version

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1 Introduction

This input paper is the primary source of knowledge for the interregional workshop A3.2a, to be held by AURA-EE during the third semester of the PLASTECO project. It provides first-hand knowledge, to serve as a short overview of the current state and the challenges of secondary raw plastic markets in the EU regions. The focus is on the following three areas of concern:

- The different financial and non-financial incentives that are in place by EU, national, or regional authorities with the aim to facilitate the development of secondary raw plastic markets.
- The financial instruments and funding opportunities that are available to plastic value chain actors to support the introduction of secondary plastics in the plastics market.
- The innovative collaborations that have been developed between plastic value chain actors to overcome various market challenges.

2 Financial policy incentives

This section presents how two EU financial policy incentives that were put in place specifically to stimulate the development of secondary raw plastic markets, the so-called 'plastic tax' and the principle of 'eco-modulation', have been implemented in the various Member States. The objective is to show how EU measures are being implemented differently in each State (focusing primarily on PLASTECO countries) and what common issues and discrepancies emerge as a result.

EU plastic tax

Starting from the most recent development on the EU level, a new pan-european levy (so-called 'plastic tax') on non-recycled plastic packaging waste will be in effect on 1 January 2021 for all EU countries[1], as part of the measures to fund the EU Recovery Plan for 2021-2027. According to Johannes Hahn, European Commissioner for Budget and Administration, this aims to be an additional incentive to reduce plastic packaging waste by pressuring countries to further facilitate the circular plastics economy[2]. The tax will be a new revenue source for the EU budget after 2021, representing a national contribution calculated on the weight of non-recycled plastic packaging waste with a call rate of €0.80/kg (estimated to bring back 7 billion euros) [3].

Member States will have a large degree of freedom as to how they implement measures to collect the tax and it is expected that, due to different systems, this will lead to a host of heterogeneous measures. Although it is still early, two trends emerge regarding the tax: it will be financed either

[1] As agreed at the European Council of 17-21 July 2020: https://ec.europa.eu/commission/presscorner/detail/en/qanda_20_2465
[2] https://www.europarl.europa.eu/doceo/document/E-9-2020-004514-ASW_EN.html
[3] To avoid an excessively regressive impact, lump sum reductions are applied to contributions of Member States with a GNI per capita in 2017 below the EU average. The lump sum corresponds to one-fifth of the EU average per-capita quantity of non-recycled plastic packaging waste recorded in 2017, multiplied by the 2017 population residing in the country.

directly through the national budgets (without affecting consumers or producers and importers) or through increases in the VAT of certain plastic products (mostly single-use plastics).

Although it is clear that in the long-term the tax will not be financed primarily from national budgets, it is not yet clear, however, who would pay for this in the future – it could be the manufacturer, the company that uses/manufactures the product, or the retailer that sells it. In any case, it is expected that end users will see an increase in the price of single-use plastic products in the future if the effect of other relevant measures is counted in (e.g. SUP Directive). Nevertheless, all Member States will have to transfer the amount calculated by the Commission to the central budget regardless of whether they have set up a national system to collect the amount required.

Focusing on the countries represented in the PLASTECO partnership, it seems that Austria intends to pay its contribution from its national budget[4]. Similarly, Bulgaria will cover the tax through the national budget, at least for 2021. Tsvetanka Todorova, chairwoman of the Bulgarian Polymers Association, has expressed her concerns regarding the way the tax is calculated, warning that Bulgaria does not have reliable statistics on the amount of non-recycled plastic package[5]. In any case, the Bulgarian industry would not like to see additional fees be imposed on packaging producers.

Italy has opted for a VAT increase in single-use plastic products[6]. However, it has decided to postpone it until July 1st, 2021[7], due to the pandemic. Greece, beginning on January 1st, 2022, will impose an environmental tax on plastic cups and lids, as well as on disposable food containers. It is unclear, however, if this will be in connection to a special "Green Fund" for actions to protect the marine environment or they are meant to indirectly finance the EU plastic tax[8]. So far, the Romanian authorities have not published any draft legislation, nor have they announced how they will implement the tax. There already is a tax of 2 lei/kg on plastic packaging. There is a possibility that the authorities may decide to increase this tax[9].

Still, most countries have not made their plans public yet. This is probably in relation to the complexity of the issue and the ongoing deliberations at the EU level, as the EU budget was finalised recently, in December 2020. France and Germany are expected to be the two biggest contributors to the tax[10]. France's policy developments in eco-modulation (see below) and the new Law on the Circular Economy[11] (see section 4) could be connected to this plastic tax indirectly, as a) eco-modulation could cover some of France's expected tax contribution and b) the Law on Circular Economy will force the non-recyclable plastic rate to drop, therefore reducing France's overall

[4] https://www.parlament.gv.at/PAKT/VHG/XXVII/J/J_03196/index.shtml
[5] https://viapontica.org/en/is-bulgaria-ready-to-introduce-a-plastics-tax/
[6] https://www.vatupdate.com/wp-content/uploads/2020/12/2020-12-26-Upcoming-changes-in-2021-as-part-of-Budget-2021-in-European-Union.pdf & https://www.fiscooggi.it/rubrica/analisi-e-commenti/articolo/legge-bilancio-2021-e-fisco-3-plastic-e-sugar-tax-partenza
[7] https://www.foodpackagingforum.org/news/italy-to-delay-new-plastics-tax-until-2021#:~:text=Italy%20has%20decided%20to%20postpone,2020%20until%20January%201%2C%202021.&text=The%20law%20is%20set%20to,be%20exempt%20from%20the%20tax.
[8] https://greece.greekreporter.com/2020/12/31/greece-bans-plastic-in-public-sector/
[9] https://home.kpmg/ro/en/home/insights/2020/10/new-tax-on-plastic-packaging-from-1-january-2021.html
[10] POLITICO has made crude estimations of the amount each MS will be called to pay under the plastic tax, confirmed unofficially by EU officials: https://www.politico.eu/article/france-germany-set-to-pay-the-most-under-eu-plastics-tax/
[11] https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000041553759?r=vU4K47pShD

contribution to the tax. In Germany, it seems that the reception of the tax is positive, and it is perceived as an opportunity to expand existing recycling systems[12]. The Federal Government has not answered questions about the counter-financing of the new tax via companies and (indirectly) via consumers[13], therefore this issue currently remains open. However, if this will be the case, such a counter-financing mechanism will be decided by the federal states[14].

The plastic industry has so far negative reactions, but the civil society is positive. The European Plastic Converters association has expressed its opposition to the tax. Managing Director Alexandre Dangis mentioned that the tax will probably not have the expected result, as it will increase the cost of plastic recycling and encourage the companies to shift to other packaging materials with a bigger environmental impact[15]. On the other hand, the Germany-based association Die Deutsche Umwelthilfe, a non-profit environmental and consumer protection association, has endorsed the tax, saying that it could be even higher[16].

Eco-modulation

Article 8a(4)(b) of the updated Waste Framework Directive specifies that Producer Responsibility Organisations (PROs) can modulate their fees according to criteria, such as durability, reparability, and recyclability of the waste[17]. This provision for modulation within Extended Producer Responsibility (EPR) schemes has long been recognised as having the potential to incentivise improvements in respect of the design of products to deliver environmental benefits ('eco-modulation'). In the following paragraphs an overview of the different types of approaches to fee modulation is presented across several Member States. The focus is primarily on the systems of the PLASTECO countries and plastic packaging.

When focusing on plastic waste, plastic packaging waste has received the most attention by Member States, as 20 of them have set up fee modulations differentiating plastic packaging waste from other types of packaging waste (e.g. steel, paper)[18]. That is, they have some form of granularity in the fee structure, which means that there are specific fee categories for certain types of packaging (i.e. fees are not just set on the broad material type but are further specified)[19]. Six countries (France, Italy, Netherlands, Portugal, Sweden) out of the EU-27 have even more granularity in fee structure, where

[12] https://www.recyclingtoday.com/article/europe-germany-plastic-recycling-disposal-levy/
[13] https://www.verpackungsgesetz.com/en/europaeischer-rat-beschliesst-plastiksteuer/#:~:text=Die%20Plastiksteuer%20ist%20laut%20Bundesregierung,in%20den%20EU%2DHaushalt%20einflie%C3%9Fen.
[14] https://dip21.bundestag.de/dip21/btd/19/226/1922653.pdf
[15] https://www.recyclingtoday.com/article/europe-germany-plastic-recycling-disposal-levy/
[16] https://www.recyclingtoday.com/article/europe-germany-plastic-recycling-disposal-levy/
[17] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:32018L0851&from=EN#d1e1355-109-1
[18] The focus is on packaging, as a) it is the only category of plastic waste for which almost all EU-27 countries have some type of Extender Producer Responsibility (EPR) scheme, b) plastic packaging is the main type of plastic waste, by far. It is important to note, however, that France is the only EU MS to have EPRs that also cover the plastic content in Electronic and Electrical and Electronic Equipment (EEE) waste, furniture, and textile products. Alongside Germany, Ireland, and Sweden, France is also one of the four countries that has an EPR scheme covering agricultural plastics. These, however, will not be covered in this input paper, as there are very few data available and there can be no comparison with other PLASTECO partners.
[19] The seven MS that do not have a basic fee modulation are: Estonia, Denmark, Hungary, Latvia, Malta, Poland, Portugal. Portugal, however, does differentiates its fees among various plastics even though there is no fee modulation between plastic and other types of packaging waste.

the modulation system comprises features such as penalty or bonus fees for specific design features, or numerous different fee levels within the material type, accounting for factors such as its 'sortability' and 'recyclability'.

In general, three types of fee modulation exist in PLASTECO countries: a) France has implemented a quite differentiated system of modulation based on bonuses and penalties, b) Italy has set categories that differentiate between three types of plastic packaging waste and has set fees accordingly, and c) all other countries (Greece, Germany[20], Austria, Bulgaria, Romania, Latvia) have set only basic differentiations between materials (e.g. between plastics and paper, steel, etc), with varying degrees of granularity, without however going into differentiations among different types of plastics (e.g. between PE and PP). It is also important to note that there is limited emphasis on reusable packaging through fee structures, as well as on recycled content. In fact, only France has fee modulations that cover recycled content. A possible explanation is that 'recycled content' is not explicitly mentioned in the WFD as a modulation criterion, and therefore many stakeholders may not consider it to be part of PROs' responsibility.

In France[21] the fee is modulated based upon a) the weight of the material, b) the number of 'Packaging Units' in the 'Consumer Sales Unit'[22] and c) an adjustment in the form of a bonus or a penalty. The (c) refers directly to the recyclability of the plastic packaging waste and the introduction of recycled content in the product, as several bonuses (i.e. fee reductions) are available in respect to the following: a) plastic packaging already covered by the current sorting guidelines, b) rigid plastic packaging that can join an existing recycling channel, c) polyethylene (PE) containing at least 50% recycled material, d) reduction at source and recyclability improvement, and e) Awareness-raising.

A recent Decree[23] coming from the Ministry of Ecological Transition is expected to pressure manufacturers to promote products "more repairable and recyclable, which contain fewer dangerous substances, and which incorporate more recycled materials, according to the logic of circular economy". Incentives are introduced for the integration of recycled plastic in the design of packaging, extending the principle to products that include PP plastic (polypropylene) and PE plastic (polyethylene). By 2021, the bonus fee for integrating recycled plastic will increase to 30% for packaging that incorporates 50% recycled material from household or industrial and commercial packaging and remains at 50% for packaging incorporating at least 20% recycled material derived solely from household packaging.

Currently, a bonus of 12% on the total CSU contribution is granted for bottles and vials made from PET, HDPE, or PP, as this type of plastic packaging meets French national sorting guidelines and has a consolidated recycling channel. A 50% bonus is applied to contributions by weight for plastic material in the polyethylene unit(s) where there is at least 50% recycled material. Penalties are applied concerning a) 'disruptive' packaging components, b) packaging in the sorting guidelines

[20] Until recently in Germany, which has a system involving competing PROs, there has been no requirement to modulate fees. However, circumstances have changed with the new German Packaging Act (VerpackG). Which requires that when calculating participation fees, PROs shall be obliged to create incentives for packaging manufacturers. Guidance documents on how to implement fee modulation are still in progress.
[21] https://bo.citeo.com/sites/default/files/2020-07/CITEO-Rapport-activite-2019.pdf
[22] E.g., a package of 4 yogurts, the 'Consumer Sales Unit', has 5 'Packaging Units'.
[23] https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000039322895?r=ex2EWBZaBC

without a recycling channel, c) PET packaging with mineral opacifiers, and d) mineral oils in paper and cardboard[24]. It is important to note that CSUs subject to a penalty cannot be awarded a bonus.

In Italy, there are four different categories for modulating the fees on plastic packaging: a) Level A: sortable and recyclable packaging from the commerce and industry circuit, b) Level B1: sortable and recyclable packaging from the household circuit – packaging with an effective and consolidated sorting and recycling chain, c) Level B2: sortable and recyclable packaging from the household circuit- packaging with non-consolidated sorting and recycling packaging, and d) Level C: packaging that is not sortable/recyclable with current technologies[25].

A similar approach to that of Italy, focusing on two notable cases outside of the partnership, is taken by Sweden[26] and Netherlands[27]. In Sweden, for household and service packaging the fee is differentiated into two levels – a lower fee and a higher fee. The fee category within which packaging formats will be placed depends upon the material (e.g. PET, PP etc), its sorting and processing properties, as well as its demand after sorting and processing. In the Netherlands, the regular fee for plastics can be reduced for certain plastic packaging made from PE, PP, or PET that adhere to specific requirements and are well-received by the recyclers.

Portugal has taken a more limited, but targeted, approach based on applying penalties, combining elements of both approaches[28]. There is a single fee category for plastics, glass etc, but to discourage the use of packaging that disrupts the recycling process, a penalty equal to 10% of the fee will be applied to the following three types of packaging: a) PET bottles with metal caps, b) glass bottles with non-removable ceramic and steel stopper, and c) PET bottles with PVC labels. What is evident here is that the scheme is seeking to drive out disruptors in formats that could otherwise be expected to be recycled at high rates.

It is expected that the European Commission will roll out, in line with Article 8(5) of the revised Waste Framework Directive, guidelines for the Member States on fee modulation per material[29]. These guidelines will follow the Roadmap "Towards an EU Product Policy Framework contributing to the Circular Economy"[30] and its consultation that followed, and which included an extensive discussion on eco-modulation by relevant stakeholders. According to a policy paper from various packaging industries[31] and other opinions from industrial actors[32], the European Commission plans

[24] Citeo & Adelphe (2019) Proposition de Citeo et Adelphe pour l'ecomodulation du tariff 2020, 29 May 2019.
[25] http://www.conai.org/en/businesses/environmental-contribution/
[26] https://www.ftiab.se/download/18.3290e776169a201ce416ac/1557997776406/Packaging%20materials%20and%20reporting%20categories%202019.pdf
[27] https://afvalfondsverpakkingen.nl/en/packaging-waste-management-contribution
[28] https://www.pontoverde.pt/aderentes_uk/Tabela%20de%20penaliza%C3%A7%C3%B5es%202019%20EN.PDF
[29] https://ec.europa.eu/transparency/regdoc/rep/10102/2019/EN/SWD-2019-91-F1-EN-MAIN-PART-1.PDF p.14. & https://www.eucobat.eu/news/minimum-requirements-epr-schemes-eunomia-recommendations-guidance-member-states-ecomodulation
[30] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/1740-Towards-an-EU-Product-Policy-Framework-contributing-to-the-Circular-Economy
[31] https://feve.org/wp-content/uploads/2020/04/EPR-and-Eco-modulated-Fees_Steel-Aluminium-Glass_Position-Paper_October-2019.pdf
[32] https://s3-eu-west-1.amazonaws.com/avfall-norge-no/8_Expra_Norway-4-Dec-2019.pdf?mtime=20191211154751&focal=none

to make mandatory the criterion of recyclability (through 'positive' and 'negative' list of materials) and eco-modulated EPR-fees for all EU-27 countries, and to push for recyclable materials in EPR-fees by 2023-2024.

3 Financial instruments

This section covers the two main EU instruments that provide funding to businesses that want to introduce new secondary plastics to the market, the Horizon2020 and LIFE programme; both are heavily focused on innovation. Horizon 2020 is presented in a separate Microsoft Excel file that accompanies this input paper. To showcase the impact of the LIFE instrument, the focus is on four good practice projects that successfully managed to introduce new secondary raw plastics to the market.

This section also covers two national financing schemes from France, ORPLAST and AideRecy, which provide funding to plastic producers and recyclers respectively. It is evident from the background research conducted for this input paper that there are not yet many national or regional financial instruments available to plastic value chain actors to support the introduction of secondary plastics in the plastics market[33]. It is considered that most EU countries have followed a more indirect approach so far, for example taxing single-use plastics and rolling out green public procurement criteria.

However, this does not necessarily mean that plastic value chain businesses do not receive any kind of financing; they might benefit from funding instruments that have a wider scope (and therefore do not focus solely on plastics) – e.g., it is common to provide generic funding to businesses for 'business model upgrade' or 'technical equipment purchase' through European Regional Development Fund (ERDF) financing.

Horizon2020 programme

The Horizon2020 programme is elaborated in a separate Microsoft Excel file. The file contains information regarding EU co-funded projects in the Horizon 2020 programme (2014-2020 programming period) which are relevant to the emergence of secondary raw plastic markets. The information was sourced online through the H2020 open data provided by the 'Horizon Dashboard'[34]. To pinpoint projects relevant to our objective, data collection efforts focused on the topics that explicitly addressed plastics and thereby contained the term in their description. Out of the 2985 Topics (from Calls), 5 Topics explicitly addressed plastics, under which 13 projects were funded. All the data regarding these 13 projects can be found in the Sheet named 'Raw data'. The 'Insights' sheet visualises key takeaways from the data, including graphs. The rest of the sheets ('Topics', 'Projects', 'Countries', 'Participants', 'SMEs') breaks down in detail a certain aspect of the data.

[33] This lack of data is also confirmed by the PLASTECO study A1.2, where only thee out of the 35 policies provided by partners and covered the 8 countries of the partnership addressed directly issues in the secondary raw plastics market. The three policies are the 'Plastica Seconda Vita' (Italy), ORPLAST and AideRecy (France), all elaborated in the input paper.
[34] https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/opportunities/horizon-dashboard

LIFE programme

The LIFE programme is the EU's funding instrument for the environment and climate action. It was created in 1992, with the last funding period (2014-2020) having a budget of €3.4 billion. To date, LIFE has contributed €64 million to around 70 projects that deal with the plastic value chain[35]. These projects have a combined total budget of around €175 million. They cover all the areas addressed by the EU Plastics Strategy, from improving the economics and quality of plastics recycling, to curbing plastic waste and littering and driving investment towards circular solutions. Out of the 70 projects, the focus will be on four exemplary projects from the last funding period that aim to boost the demand for recycled plastics, upcycling hard-to-recycle plastics (e.g., polyester, expanded polysterene foams, plastic fibres from end-of-life vehicles) into new products across a range of sectors – construction, automotive, logistics (pallets) and footwear. To this end, these four LIFE projects aim to curb resistance to change among product manufacturers and challenge uncertainties about market outlets of closed-loop recycled plastics, both common barriers to the higher uptake of recycled content.

- Through the ECOTEX project[36], shoemakers are pioneering a technique to reuse their own plastic waste as insoles for new shoes, as up to 11% of high-grade polyester is currently lost during footwear manufacturing. A chemical process developed at the GAIKER Technological Centre in Bilbao, the initiator of the partnership, can transform the waste into polyester as good as the virgin materials it came from, thus creating a closed recycling loop. Asier Asueta, manager of the project, points to the emerging market for green products and mounting legislation on responsible waste disposal as a driver for ECOTEX, mentioning that there is high potential for economic benefits given the rising demand for fibres and polymers of renewable origin, in particular of chemically-recycled polyester. The partnership has plans for a plant capable of treating 20000 tonnes per year of polyester waste and is networking with potential clients interested in taking up the technology. Two of the problems encountered during the project are the large overheads in rolling out the chemical process that polyester producers face and the quality of the recycling feedstock.

- Expanded polystyrene foams are used widely for insulation in the construction sector. However, due to contaminations and pollution, they cannot be allowed in products or recycling streams. To address this, the PSLOOP project has set out to recycle this material at market-competitive costs[37] and to phase out the need to transport this hazardous waste across borders for special treatment. The recycling process was invented by the Fraunhofer-IVV Institute and the project was initiated by a consortium of Dutch companies and cooperatives that have access to these plastics in the construction sector. The project is currently building a demonstration recycling plant in the Dutch city of Terneuzen, capable of recycling 3000 tonnes per year of polystyrene foam. Partners involved in the project also work on establishing a sustainable value chain for polystyrene waste by demonstrating a standard collection and pre-treatment system. The

[35] For all 70 projects, see: https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.getProjects&themeID=70&projectList
[36] https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=5798
[37] https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=6263

collection system will notably supply the demonstration plant with a constant stream of local waste.

- Textile fibres make up about 10% of the weight of an old tyre but are difficult to clean and extract from other materials. As a result, every year around 320000 tonnes of this waste are landfilled or incinerated around the EU. The REFIBRE project addresses these two barriers by a new cleaning technology to enable recycling and by identifying viable end uses for the recovered materials, namely plastic pallets used for transporting goods[38]. The project's pilot plant in Italy first cleans and processes the textile fibres. It then combines the recycled material with other plastic-based ingredients to improve the impact resistance and flexibility of plastic pallets. According to project manager Roberto Cardinali, the inclusion of recycled fibre has made conventional plastic pallets cheaper, greener, and better. In addition, project results show that the recycled plastic compound with the fibre presents financial and environmental benefits to manufacturers as it works out cheaper to produce than virgin plastic and offers a new life to raw materials used in manufacturing the tyres.

- The REPLACEBELT project, as all projects above, aims to introduce more recycled plastic in the market to displace virgin materials as a feedstock for new products, especially long-term industrial applications[39]. Led by the company Plastic Metal, Italy, the project has shown a way of upcycling non-packaging waste material into components for a new type of conveyor belt. In fact, the new conveyor belt complies with market standards and is more durable than standard PVC-made belts. Project results show that intercepting domestic bulky plastic waste streams in the Italian region of Veneto alone could produce upwards of 30000 tonnes a year of non-packaging plastic fit for manufacturing.

ORPLAST

"ORPLAST: Objectif Recyclage PLASTiques"[40] is a French financial instrument by ADEME that was designed to financially support the uptake of recycled plastics into the production of new plastics by plastics manufacturers. The policy objective is a) to stimulate the demand for recycled plastics by encouraging plastic manufacturers to develop their supply chains, and to make their clients aware of the existence of such feedstocks, and b) to maintain a decent price for the regenerated resins versus virgin resins by subsidizing the extra costs. The primary target group is plastic manufacturers and plastic converters. The indirect target group is plastic recycling companies who are facing difficulties to provide recycled resins to the market due to lack of demand and unfavourable recycling costs. ORPLAST has three financial tools: a) Grants for diagnostics and feasibility studies; b) Investment grants; and c) Financial support scheme to the purchasing of regenerated resins above a price maintaining the viability of the regeneration process compared to virgin resins in a period (from 2015) where these resins were more competitive because of the crude oil price.

ORPLAST is based on calls for proposals; companies must fill an application form and a jury selects the most promising and efficient projects. The instrument has been quite successful: the first call for

[38] https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=5298
[39] https://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=4863
[40] https://agirpourlatransition.ademe.fr/entreprises/dispositif-aide/20200922/orplast2020-168

proposals launched in 2016, was followed by another in 2017, and a new one was announced at the end of 2020. The selection process of the first call saw 68 projects being funded with 15 million euros in total. The second call provided funding to 26 companies with 6 million euros granted in total. According to estimates, the second call is expected to increase the use of recycled plastics by 80000 tons by 2021, creating 120 jobs along the process[41]. For the finished projects, an annual increase in recycled resins uptake is recorded of +29% (+ 24 kt/y) and for the ongoing projects an increase of +61% (+ 35 kt/y) is expected. A fourth edition of the ORPLAST call for projects is expected on March 1, 2021[42].

AideRecy

"AideRecy"[43] is a French financial instrument set up by ADEME to support companies that produce secondary plastic materials. In particular, AideRecy will provide to beneficiaries a flat-rate aid calculated based on a price list for supporting the sale of recycled plastics. The support provided will be based on a sales forecast over one year. Private companies that produce recycled materials were eligible to participate, irrespectively of the size of the company; this includes only companies that buy waste intending to transform it into a secondary material through a production process. It does not cover disposable recycled materials that are part of the normal production process (e.g., non-conforming waste of a production process). It also excludes companies that trade recycled plastic materials. As with ORPLAST, this instrument is also arranged through a call for projects; the call was published in October 2020 and the results are expected in early 2021.

4 Non-financial policy incentives

This section presents non-financial policy incentives and developments (national and EU). The focus is on the case of "Plastica Seconda Vita" (Italy), a certification tool employed to incentivise businesses to use recycled plastics in their products in relation to green public procurement in Italy[44]. The section also includes a short discussion on the implementation of the Single-Use Plastics Directive in the PLASTECO countries and a note on the new export ban to be implemented by the EU in 2021; combined, these non-financial policy developments could act as incentives for the further development of the secondary raw plastic markets.

Plastica Seconda Vita

"Plastica Seconda Vita" (PSV)[45] is an environmental product certification system dedicated to materials and manufactured articles obtained from the valorisation of plastic waste. Depending on the source of plastic waste, PSV has five types of certifications for a) separate collection waste, b)

[41] http://www.plastiques-caoutchoucs.com/L-Ademe-presente-les-laureats-d.html
[42] https://www.cycl-op.org/articles/h/orplast-objectif-recyclage-plastiques-petites-moyennes-et-grandes-entreprises.html
[43] https://appelsaprojets.ademe.fr/aap/AideRecy2020-190
[44] Drawing from the PLASTECO A1.2 data, the 35 policies reported by partners in their territories target an array of issues, such as the improvement of the waste management process to facilitate better collection and recycling, the promotion of public awareness, and the facilitation of voluntary agreements between businesses for phasing-out plastics. Out of the 35 policies, however, only one is non-financial and addresses the uptake of secondary plastics by the market: the 'Plastica Seconda Vita' (PSV) in Italy.
[45] For more information, see https://www.ippr.it/

industrial waste, c) mixed waste, d) waste to be used for food contact, and e) waste to be used for plastic bags. All five have different specifications, minimum requirements for recycled content allowed, and some, such as (a) and (d), have additional requirements regarding treatment technologies. PSV can be applied to all production sectors, and currently, they have over 3000 certified products in the construction, packaging, furniture, fabrics, to name just a few[46].

PSV operates as third-party certification, meaning independent auditors review the manufacturing process of a product and determine that the final product complies with specific standards for safety, quality, and performance. To ensure the authenticity of the recycled materials (traceability), auditors conduct on-site inspections and may visit multiple sites if the traceability of the materials cannot be definitively established in the producer's site[47]. Audits take place annually and the cost of obtaining the certification is 3000 euros per year per company (and not per product).

Apart from businesses, PSV is addressed to public authorities, in the framework of green public procurement; in fact, the Italian State has implemented PSV in this way, as it was included in the Ministerial Decree of 22 February 2011 - "Minimum criteria for green tenders by the Public Administration for the purchase of textiles, office furniture, public lighting, IT equipment" regarding packaging requirements, as a tool for adopting environmentally sustainable solutions[48]. The "Institute for the Promotion of Recycled Plastics" (IPPR), the organisation which runs the PSV label, was founded in 2004 as a response to the provisions of Ministerial Decree 203/03, governing green purchases by the public administrations[49]. IPPR then created the PSV label for recycled plastic materials and products, to provide a tool for controlling recycled content in plastic products.

Implementation of the Single-Use Plastics (SUP) Directive

The SUP is soon going to become law in all EU states, as EU countries have until July 2021 to transpose the EU Directive into their national laws and adopt the measures needed for successful implementation of the Directive. The current situation in the 8 countries of the partnership (Greece, Italy, Austria, Bulgaria, Germany, France, Romania, Latvia) shows that only a few countries have already adopted measures to transpose the Directive or are about to do so. In most countries, the transposition process has been delayed or has only just started. France appears to be the furthest advanced on the transposition of the SUP Directive thanks to the adoption of a law in February 2020 that goes further than the EU Directive. The following presents the progress of the PLASTECO countries in the implementation process[50].

[46] For the full list, see https://www.ippr.it/i-settori-applicativi
[47] For a detailed description of all the auditing steps, see https://www.ippr.it/images/modulistica/Regolamento-certificazione-PSV-2018.pdf
[48] https://www.ippr.it/legislazione-psv
[49] Article 8 of the Decree specifies that: "Each supply chain of materials will be able to have an organization between producers of recycled materials, producers of recycled products, research institutions and any supply chain consortia with the aim of: a) checking the compliance over time with what is declared in the request for registration in the recycling directory; b) adopt, where possible, analysis systems on recycled materials that make it possible to verify their nature and origin; c) promote research for the identification of analysis systems on recycled materials that make it possible to verify their nature and origin."
[50] The following is based on data provided by Break Free From Plastic movement and of Seas At Risk during Plastic Free July https://www.breakfreefromplastic.org/plastic-free-july-2020/

The French Law on the Circular Economy[51], adopted in February 2020, transposes most of the measures of the SUP Directive in most cases in a nearer future than what the SUP Directive foresees and even goes further on some topics. For example, the law also bans plastic confettis, lids for cups, and packaging for fruits and vegetables (with some exceptions) in addition to the bans included in the SUP Directive. Also, the law foresees that all foodware used for on-site consumption in hotels, restaurants and cafes, will have to be reusable by 2023; and by 2022 for those used in daily home meal deliveries. It also includes an objective to halve the consumption of plastic bottles by 2030, and to phase-out all single-use plastics packaging by 2040. Yet, detailed measures that will be important for a successful implementation, notably with regards to the above reduction targets and extended producer responsibility, are yet to be adopted. In addition, France still grants concerning exemptions for single-use plastics bags partly made of bio-based sources and compostable, as well as for tea bags that are biodegradable.

The waste management law is currently being revised in Austria and includes articles aiming at transposing the SUP Directive. Yet many of the details are still to be set, as well as the level of ambition. The focus of the discussions has been on the establishment of a Deposit Return System (DRS) for single-use plastic bottles. The government has faced strong pressure from the industry that opposes a DRS, even though it is the only proven method to reach the legally binding 90% separate collection target for bottles. The Austrian government is expected to reach a final decision on whether to set a DRS by the beginning of 2021.

Germany is in the process of adopting a law that transposes EU bans of certain SUP as required by the SUP Directive. A DRS system for most single-use plastic bottles, as well as cans, has been in place since 2003. However, many of the measures of the SUP Directive are yet to be adopted, and the level of ambition remains rather low. In Greece, although the government has announced measures, the draft legislation has not been made public. Some developments seem promising, such as the setting of reduction targets for single use plastic cups and bottles, and the application of measures in the public sector already from January 2021. Yet legal measures are still to be adopted, and the details and level of ambition remain uncertain.

The legislative process to transpose the SUP Directive has started in Italy, with limited ambition in the draft measures. The legislative process is in its early stages. Italy has had a ban on plastics bags, except for biodegradable and compostable bags, since 2013 and on cotton buds made of plastic since 2019. The Latvian government proposed a draft legislation that transposes the SUP Directive, with no higher ambition than the legal requirements of the Directive. The draft law has been stalled in the Parliament process for adoption. Latvia set up a DRS for single-use plastic bottles in 2016. As of Fall 2020, the Bulgarian government had not yet started the legal process to transpose the SUP Directive.

Further restrictions on exports of plastic waste

Another development that will potentially benefit the secondary raw plastics market is the new restrictions on plastic waste exports. The EU is tightening regulation on exports of plastic waste to non-OECD countries. New rules adopted by the European Commission on 22 December 2020 ban

[51] https://www.legifrance.gouv.fr/jorf/id/JORFTEXT000041553759?r=vU4K47pShD

the export of plastic waste from the EU to non-OECD countries, except for clean plastic waste sent for recycling[52]. The new rules are designed to end the export of plastic waste to third countries that lack the capacity and standards to manage it sustainably.

This new development puts further pressure on the plastic recycling industry to provide more efficient solutions to secondary plastics and governments and regions to further adopt circular economy models in the management of plastic waste. Plastic Recyclers Europe, a trade association, says that that banning exports will create opportunities to stimulate recycling at home, in particular for recycled PET, a resin used in the manufacturing of plastic bottles.[53] At the same time, however, the association underlines that achieving higher recycling rates will require building new facilities, a process that is likely to take years[54]. For this reason, it is feared that these new restrictions will contribute to an increase in plastic landfilling in the short-term.

5 Collaborations

This section presents collaborations between plastic value chain actors in the EU, focusing on partnerships among plastic manufacturers, converters, and recyclers that successfully tackle the cooperation and financial challenges faced in secondary raw plastic markets.

Partnerships across the plastic value chain can either have a more open or closed approach to plastic waste. Although recycled plastic of high quality exists in the market, this is true only for very specific fractions of plastic, e.g. PET, as there are not consolidated recycling solutions for more niche applications, e.g. in automotive or engineering industries. As a result, when companies seek high quality plastic for their applications, they often tend to form small tight-knit recycling partnerships with their core business partners. As a result, they create industrial symbiosis-like chains that phase out the need for conventional recyclers, as products are treated within the premises of plastic production and converter companies.

This is the case with Epsotech,[55] a plastic manufacturer in France that specialises in customized formulations of engineered polymer plastic sheets that are used in the manufacturing industry for a wide range of applications, including automotive, railway, aerospace, marine and medical equipment. Since the plastic needed for Epsotech applications does not exist widely in the market, it implements a closed-loop recycling of plastic by a) collecting material rejects to reprocess them and b) reusing materials previously crushed and sorted by the companies Paprec, Indco, Qualitriplast, which were already close business partners. As a result, it can produce high quality recycled plastic and integrate it up to 60% in new thermoformed plastics. Such a close-loop recycling scheme is not only a cost-effective solution regarding raw materials but also improves the company's energy efficiency and drives costs lower. As a result, Epsotech has rolled out a similar approach in its subsidiaries, Axipack and Carolex (stationaries sector), and has cooperated with the Danish clean-

[52] https://ec.europa.eu/environment/news/plastic-waste-shipments-new-eu-rules-importing-and-exporting-plastic-waste-2020-12-22_en
[53] https://www.plasticsrecyclers.eu/post/closing-the-loop-with-pet-bottle-to-bottle-recycling-projected-to-grow
[54] https://www.euractiv.com/section/energy-environment/news/recyclers-fret-as-eu-plastic-waste-export-ban-comes-into-force/
[55] https://epsotech.com/en/

tech producer Plastix to recycle fishing nets and ropes from Denmark and use this secondary raw plastic up to 10% in new products (in monofilament products).

However, when there is a need for a larger production scale, companies move to partnerships with recyclers to create a customised solution for the secondary material they need. As a result, customised recycling partnerships are more common when larger companies are involved, whose core business is not, importantly, in niche plastics applications. Therefore, they can use post-commercial plastic waste, which smaller companies in niche plastic markets may not be able to do.

For example, Werner & Mertz of Mainz, Germany, a large cleaning products manufacturer, developed the 'Recyclate Initiative'[56], a circular economy project with the aim to achieve a high use of recycled plastic in its products (PET). For this reason, Werner & Mertz collaborated with Systec Plastics Eisfeld and EREMA, who worked together to customise the recycling process according to the company's specifications[57]. Thanks to state-of-the-art recycling technologies and close, cross-company cooperation, the partnership managed to process the contents of municipal wastes ('yellow bag' wastes in Germany) in a way that yields a high-quality raw material – post-consumer recyclates – for new packaging (PET bottles). The initiative, in its first iteration (2019), was able to fill and market 100,000 bottles with 100% recycled PET, 20% of which came from recyclates from the Yellow Bag. The high-tech Unisensor company of Karlsruhe succeeded in developing an efficient fine sorting of PET granules with the help of ultra-modern laser technology. The Frauenhofer Institute examined the recovered material and declared it in compliance with the relevant standards, which allows food-contact use of the material.

Along the same lines, Unilever has collaborated with masterbatch suppliers and recyclers in Europe to recycle the black plastic used by its TRESemmé and Lynx (Axe) brands[58]. With such a collaboration, Unilever tackles a technical problem in black plastic (HDPE) bottle recycling: until now, black plastic bottles have been impossible to mechanically detect and sort for recycling. To overcome this, they have carried out extensive trials in collaboration with waste management partners Veolia, Viridor, Suez and TOMRA, which have provided a solution for this issue. Importantly, Unilever has stated that the knowledge and expertise from developing this solution will be made accessible to others in the industry, as well as to other markets globally, so that this technology and approach can be widely used. As a result of this partnership, an additional 2500 tonnes of plastic bottles could now potentially be sorted and sent for recycling each year; both brands have begun using a minimum of 30% recycled plastic in their bottles.

Coca Cola is another example of such an approach. However, Coca Cola went a step further and invested in a plastics reprocessing facility for collecting and reprocessing plastics, as a joint venture with APPE (plastic packaging) in France[59]. Such a recycling joint venture, named Infineo, aims to overcome a common barrier in the market, which is the lack of locally available recycled PET supply.

[56] Sources: https://www.werner-mertz.de/Sustainability/Recyclat-Initiative-wins-awards/ & https://frosch.de/Nachhaltigkeit/Saubere-Meere-2.html & https://initiative-frosch.com/
[57] https://www.erema.com/en/success_stories/IDobj=2449
[58] https://www.unilever.com/sustainable-living/reducing-environmental-impact/waste-and-packaging/rethinking-plastic-packaging/
[59] https://www.packagingnews.co.uk/news/appe-and-coca-cola-commit-e9m-to-french-recycling-site-03-10-2012
Another such joint venture exists in the UK with ECO Plastics.

Infineo has boosted the capacity of APPE's reprocessing facility by 70%. The enlarged plant now recycles 20000 additional tonnes of plastics per year. As a result, the joint venture ensures that the increasing demand for recycled PET can be met, enabling Coca Cola (and probably other manufacturers) to have access to more rPET and to use it in their packs[60].

In addition to the collaborations mentioned above, there are some high-profile initiatives across the entire European value chain. The aim is to address complex harmonisation issues in the secondary raw plastics markets across multiple industries. CEFLEX[61] is a paradigmatic example of this. It is a mammoth European collaborative industry consortium, initiated in 2020, of over 100 companies and associations representing the entire value chain of flexible packaging. They came together with the aim to tackle the complex technical and business barriers to a circular economy for flexible packaging. Participants represent the full flexible packaging value chain, including raw material producers (plastics, paper and aluminium foil), ink, coating and adhesive suppliers, film producers and flexible packaging converters, brand owners, waste management companies, recyclers, extended producer responsibility organisations and technology suppliers. The project has already designed guidelines for flexible packaging in a circular economy; until 2024 it is expected to map the European flexible packaging market and to develop sustainable end-markets for secondary flexible packaging materials, including plastics, through demonstration cases and pilots in selected EU regions.

RECYCLASS[62], another EU industry initiative, is a value chain platform that aims to establish a harmonised approach towards the reuse of secondary raw plastic in plastic packaging applications. It is driven by a consortium that includes raw plastic producers, converters, recyclers, retailers, and brands. The project has developed methodologies and traceability tools to assess the recycled content that is contained in new products.

In addition to the industry initiatives mentioned above, the European Strategy for Plastics has set the target that 10 million tonnes of recycled plastics are used to make products in the EU by 2025. This compares to less than 4 million tonnes used in 2016. To reach this target, the Strategy called on stakeholders to make voluntary pledges to use or produce more recycled plastics. 70 companies and business associations submitted voluntary pledges by the end of 2018.[63] Although the pledges from plastics recyclers were substantial, the pledges from plastics converters and brand owners were significantly less. The Commission recently (2020) launched the Circular Plastics Alliance to help bridge the gap between the supply and demand for recycled plastics.[64]

[60] https://www.ellenmacarthurfoundation.org/case-studies/increasing-post-consumer-plastic-content-in-packaging
[61] Source: https://ceflex.eu/
[62] Source: https://recyclass.eu/ & https://www.allize-plasturgie.org/fr/reportages-adherent/epsotech-une-image-forte-et-une-vision-europeenne
[63] https://ec.europa.eu/growth/content/european-strategy-plastics-voluntary-pledges_en
[64] https://ec.europa.eu/growth/industry/policy/circular-plastics-alliance_en

6 Workshop discussion topics

This section will provide topics, in the form of recommendations, to be presented and discussed in the workshop, based on the thematic background elaborated in this input paper in the previous sections. Indicatively, the topics for discussion could be the following:

1. Warm-up questions:
    - Is innovation and eco-innovation a big deal for plastic companies in our region/countries?
    - From your point of view, what are the main topics for innovation in the plastic industry in your countries? (eco-design, plastic collection, plastic recycling, integration of recycled plastics, etc.)
2. Selecting the right tool: which instruments (financial, legislative, organisational, or informative) could be the most effective on each of the following issues?
    - Produce recyclable plastics
    - Increase recycling rates
    - Increase the integration of recycled plastics