



# **Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Scheme**

*Final Report*

April 2020

eunomia 

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# Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Schemes

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Final Report

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**27<sup>th</sup> April 2020**

## Report for DG Environment of the European Commission

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A handwritten signature in black ink that reads "Amanda Hogg". The signature is written in a cursive style with a large initial 'A'.

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# Contents

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- 1.0 Introduction ..... 1**
- 2.0 Waste Management Costs to be Covered by EPR Schemes ..... 4**
  - 2.1 Introduction.....4
  - 2.2 Operational Costs .....6
  - 2.3 Supporting Services .....7
  - 2.4 Material Value .....8
  - 2.5 PRO Costs .....9
  - 2.6 Observations on Costs.....9
    - 2.6.1 *Capital Costs* .....9
    - 2.6.2 *Overheads and Shared Costs* .....10
    - 2.6.3 *Wider Costs*.....10
    - 2.6.4 *Charges to Waste Holders*.....10
    - 2.6.5 *The Specific Example of Certain Current Schemes for Packaging Waste from Commercial and Industrial Sources* .....11
    - 2.6.6 *Use of Models*.....12
- 3.0 Necessary Costs.....13**
  - 3.1 Introduction and Definition.....13
  - 3.2 Legal Basis and Application .....14
    - 3.2.1 *Source in Directives* .....14
    - 3.2.2 *Applicable Targets and Objectives* .....15
    - 3.2.3 *Applicable Waste Streams*.....16
    - 3.2.4 *Geographical Application* .....17
    - 3.2.5 *Interpretation of Application*.....17
  - 3.3 Approach to Determining “Necessary Costs” .....18
    - 3.3.1 *Definition* .....19
    - 3.3.2 *Attributability and Assignment* .....22
    - 3.3.3 *Value Maximising* .....23
    - 3.3.4 *Transparency*.....23
    - 3.3.5 *Efficiency*.....23

3.4	Current Practices in Applying ‘Necessary Costs’ Across Europe .....	24
3.4.1	<i>Overview</i> .....	24
3.4.2	<i>Direct Delivery Compliance</i> .....	25
3.4.3	<i>PROs Pay Third Parties</i> .....	26
3.4.4	<i>PROs Pay Third Parties but Set Conditions</i> .....	29
3.5	Recommended Approach to Distribution of Funds .....	32
3.5.1	<i>Overview</i> .....	32
3.5.2	<i>Factors</i> .....	34
3.6	Recommendations in Respect of Efficient Service Delivery .....	36
3.6.1	<i>Systematic Efficiency</i> .....	36
3.6.2	<i>Local Efficiency</i> .....	39
3.6.3	<i>Transparency and Engagement</i> .....	42
<b>4.0</b>	<b>Existing Practice in Fee Modulation across the EU.....</b>	<b>43</b>
4.1	Packaging.....	43
4.1.1	<i>Summary of Existing Practices and Future Plans</i> .....	52
4.1.2	<i>Greater Granularity of Fee Structure</i> .....	52
4.2	EEE.....	54
4.3	Batteries .....	56
4.3.1	<i>The EU Battery Market</i> .....	56
4.3.2	<i>Current Approaches</i> .....	57
4.4	Impacts of Fee Modulation .....	59
4.5	Why is Modulation Not Widely Applied?.....	62
<b>5.0</b>	<b>Principles for Fee Modulation.....</b>	<b>63</b>
5.1	Harmonisation.....	63
5.2	Appropriate Criteria .....	65
5.3	The Role of Other Policy Measures.....	66
5.4	Ensuring Cost Recovery .....	67
5.5	Better Reflecting Net Costs through the Fee Structure .....	68
5.6	Evidential Basis for Modulation .....	69
5.7	Determining the Magnitude of the Modulation .....	70
5.8	Transparency and Consultation .....	71
5.9	Encouraging Innovation .....	72

5.10	Ensuring Periodic Review .....	72
5.11	Accounting for Competing Schemes .....	72
5.12	Co-operation between Member States .....	73
5.13	A Note on Functionality.....	73
5.14	A Note on Individual Producer Responsibility.....	75
<b>6.0</b>	<b>Criteria for Packaging Fee Modulation .....</b>	<b>75</b>
6.1	Recyclability.....	76
6.2	Recycling Rate .....	82
6.2.1	<i>Accounting for High Quality Recycling .....</i>	<i>86</i>
6.3	Reusability .....	86
6.4	Recycled Content .....	88
6.5	Recommendations for Implementation.....	90
6.5.1	<i>A More Granular Fee Structure .....</i>	<i>90</i>
6.5.2	<i>Modulate with Reference to Design for Recyclability Criteria .....</i>	<i>93</i>
6.5.3	<i>Modulate by Recycling Rate .....</i>	<i>93</i>
<b>7.0</b>	<b>Criteria for EEE Fee Modulation .....</b>	<b>97</b>
7.1	Current and Planned Legislation .....	97
7.2	Granularity of Fee Categories .....	98
7.3	Potential Criteria for Modulation.....	99
7.3.1	<i>Eco-labels.....</i>	<i>99</i>
7.3.2	<i>Disassembly and Repair .....</i>	<i>99</i>
7.3.3	<i>Information for Repairers and Recyclers.....</i>	<i>101</i>
7.3.4	<i>Spare Parts .....</i>	<i>101</i>
7.3.5	<i>Durability and Warranty Period .....</i>	<i>102</i>
7.3.6	<i>Battery Life .....</i>	<i>103</i>
7.3.7	<i>Hazardous Substances.....</i>	<i>103</i>
7.3.8	<i>Recycled Content.....</i>	<i>104</i>
7.4	Recommendations for Implementation.....	105
7.4.1	<i>Disassembly, Repair and Upgrade .....</i>	<i>106</i>
7.4.2	<i>Spare Parts Availability and Cost .....</i>	<i>107</i>
7.4.3	<i>Extended Warranty .....</i>	<i>107</i>
7.4.4	<i>Hazardous Substance Restrictions .....</i>	<i>108</i>



7.4.5	<i>Post-consumer Recycled Plastic Content</i> .....	108
7.4.6	<i>Using the Criteria in Combination, by Key Product Groups</i> .....	108
7.4.7	<i>Determining the Magnitude of the Modulation</i> .....	110
7.4.8	<i>Compatibility with Competitive Schemes</i> .....	112
<b>8.0</b>	<b>Criteria for Batteries Fee Modulation</b> .....	<b>114</b>
8.1	Current and Planned Regulation .....	114
8.2	Granularity of Fee Structure .....	115
8.3	Potential Modulation Criteria .....	116
8.3.1	<i>Rechargeability</i> .....	116
8.3.2	<i>Recycled Content</i> .....	116
8.3.3	<i>Charge Capacity and Battery Lifetime</i> .....	116
8.3.4	<i>Collection Rate</i> .....	117
8.3.5	<i>Recycling Rate and Recyclability</i> .....	118
8.4	Recommendations for Implementation.....	118
8.4.1	<i>Magnitude of the Modulation</i> .....	119
<b>9.0</b>	<b>Fee Modulation for Other Items</b> .....	<b>120</b>
9.1	Agricultural Plastics .....	120
9.2	Fishing Gear .....	121
9.2.1	<i>Potential Fee Modulation</i> .....	122
9.3	Furniture.....	123
9.4	Textiles .....	124
<b>10.0</b>	<b>Equal Treatment</b> .....	<b>125</b>
10.1	Context .....	125
10.2	Example Approaches to Equal Treatment.....	126
10.2.1	<i>Case Study: French Packaging EPR</i> .....	131
10.2.2	<i>Lessons from Attempts at ‘Equal Treatment’</i> .....	132
10.3	Elaboration of Key Principles.....	133
10.3.1	<i>Reporting Burden – Producers of Small Quantities</i> .....	133
10.3.2	<i>Reporting Burden – Producers Selling to Multiple Markets</i> .....	134
10.3.3	<i>Minimum Reporting Requirements</i> .....	134
10.3.4	<i>Fee Equality</i> .....	135
10.3.5	<i>Threshold Calculation</i> .....	136

10.3.6	<i>Threshold Transition</i> .....	137
10.3.7	<i>Threshold Setting</i> .....	137
10.3.8	<i>Larger Producer Stepped Rates</i> .....	137
10.3.9	<i>Point of Compliance</i> .....	138
10.3.10	<i>Competition</i> .....	138
10.4	<i>Recommendations</i> .....	139
10.4.1	<i>Membership of a PRO</i> .....	139
10.4.2	<i>Reporting Requirements</i> .....	141
10.4.3	<i>Use of De Minimis for Reporting Requirements</i> .....	143
10.4.4	<i>Fee Requirements</i> .....	143
10.4.5	<i>Use of De Minimis for Fee Requirements</i> .....	144
10.4.6	<i>Setting De Minimis Thresholds</i> .....	144
10.4.7	<i>Other Methods of Variation</i> .....	145
10.4.8	<i>Competitive Schemes</i> .....	145
<b>11.0</b>	<b>Tackling Free-Riding</b> .....	<b>147</b>
11.1	<i>The Nature and Scale of the Problem</i> .....	147
11.2	<i>The Key Causes of the Problem</i> .....	150
11.3	<i>Member State Survey Responses</i> .....	151
11.3.1	<i>Legislative Responses to Free-riding</i> .....	151
11.3.2	<i>Sanctions</i> .....	152
11.3.3	<i>Enforcement Responsibilities and Activities</i> .....	153
11.3.4	<i>Working Groups and EU Networks</i> .....	153
11.3.5	<i>Visible Fees</i> .....	154
11.4	<i>Recommendations for Guidance</i> .....	154
11.4.1	<i>Key Recommendation - Multi-seller Platforms and Fulfilment Houses</i> .....	154
11.5	<i>Other Potential Measures</i> .....	157
11.5.1	<i>Courier Obligation</i> .....	157
11.5.2	<i>Harmonisation of EPR Regulations and Electronic Registration</i> .....	158
11.6	<i>Co-ordination within and between Member States</i> .....	158
11.7	<i>More Explicit and Fast-acting Regulatory Powers</i> .....	159
11.8	<i>Awareness Raising</i> .....	159
	<b>APPENDICES</b> .....	<b>161</b>

A.1.0Packaging Fee Modulation in Italy .....	162
A.2.0Packaging Fee Modulation in France .....	166
A.3.0Packaging Fee Modulation Proposals in Germany.....	177
A.4.0Agricultural Film .....	180
A.5.0Fishing Gear .....	198
A.6.0Furniture.....	207
A.7.0Textiles .....	211
A.8.0Stakeholder Engagement .....	216



## 1.0 Introduction

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Extended producer responsibility schemes are a means of ensuring that the “polluter pays” principle is applied to waste management. Directive 2018/851 amending Directive 2008/98/EC on waste states in Article 14 that: <sup>1</sup>

*In accordance with the polluter-pays principle, the costs of waste management, including for the necessary infrastructure and its operation, shall be borne by the original waste producer or by the current or previous waste holders.*

It further states that:

*Member States may decide that the costs of waste management are to be borne partly or wholly by the producer of the product from which the waste came and that the distributors of such product may share these costs.*

While Member States have discretion over whether to establish producer responsibility schemes for many materials, they are required to establish producer responsibility arrangements in some areas.

- Directive 2018/852<sup>2</sup> amends Article 7 of Directive 94/62/EC<sup>3</sup> to make clear that extended producer responsibility schemes **must** be established for all packaging in accordance with Articles 8 and 8a of the amended Directive 2008/98/EC.
- Article 7 of Directive 2012/19/EU requires Member States to “ensure the implementation of the ‘producer responsibility’” in respect of meeting recycling targets for waste electrical and electronic equipment.
- Article 16 of Directive 2006/66/EC requires Member States to “ensure that producers, or third parties acting on their behalf, finance any net costs” arising from the collection and treatment of batteries and accumulators.
- Article 5 of Directive 2000/53/EC requires Member States to “ensure that producers meet all, or a significant part of, the costs” of the collection and treatment of end of life vehicles.

Directive 2018/851 recognises, at Recital 21, that:

*Extended producer responsibility schemes form an essential part of efficient waste management. However, their effectiveness and performance differ*

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<sup>1</sup> European Parliament and the Council of the European Union (2018) Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on Waste, 2018/851

<sup>2</sup> European Parliament and the Council (2018) Directive (EU) 2018/852 of the European Parliament and of the Council of 30 May 2018 amending Directive 94/62/EC on packaging and packaging waste

<sup>3</sup> European Parliament and Council (1994) European Parliament and Council Directive 94/62/EC of 20 December 1994 on Packaging and Packaging Waste

*significantly between Member States. It is necessary therefore to set minimum operating requirements for such extended producer responsibility schemes.....*

Recital 22 notes that:

*The general minimum requirements should reduce costs and boost performance, as well as ensure a level playing field, including for small and medium-sized enterprises and e-commerce enterprises, and avoid obstacles to the smooth functioning of the internal market. They should also contribute to the incorporation of end-of-life costs into product prices and provide incentives for producers, when designing their products, to take better into account recyclability, reusability, reparability and the presence of hazardous substances. Overall, those requirements should improve the governance and transparency of extended producer responsibility schemes and reduce the possibility of conflicts of interest emerging between organisations implementing extended producer responsibility obligations on behalf of producers of products and waste operators that those organisations contract. The requirements should apply to both new and existing extended producer responsibility schemes. A transitional period is however necessary for existing extended producer responsibility schemes to adapt their structures and procedures to the new requirements.*

Article 8a establishes the general minimum requirements for extended producer responsibility schemes. However, in the absence of appropriate guidance, there is a risk that elements of Article 8a are implemented in divergent ways across Member States. The European Commission acknowledges this point more broadly in relation to the wider transposition of legislative requirements in COM(2015) 595 final, stating that:<sup>4</sup>

*The complete and correct transposition of the new legislation is essential to guarantee that their objectives (i.e. protecting human health and the environment, increased resource efficiency, and ensuring the functioning of the internal market and avoiding obstacles to trade and restriction of competition within the EU) are achieved.*

Article 8(5) of the Waste Framework Directive states that:

*The Commission shall publish guidelines, in consultation with Member States, on cross-border cooperation concerning extended producer responsibility schemes and on the modulation of financial contributions referred to in point (b) of Article 8a(4).*

While guidelines are to be established in the first instance, to seek to avoid divergence in implementation, Article 8(5) allows for the possibility of implementing acts to ensure distortion of the internal market is avoided:

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<sup>4</sup> See [http://eur-lex.europa.eu/resource.html?uri=cellar:c2b5929d-999e-11e5-b3b7-01aa75ed71a1.0018.02/DOC\\_1&format=PDF](http://eur-lex.europa.eu/resource.html?uri=cellar:c2b5929d-999e-11e5-b3b7-01aa75ed71a1.0018.02/DOC_1&format=PDF)

*Where necessary to avoid distortion of the internal market, the Commission may adopt implementing acts in order to lay down criteria with a view to the uniform application of point (b) of Article 8a(4), but excluding any precise determination of the level of the contributions. Those implementing acts shall be adopted in accordance with the examination procedure referred to in Article 39(2).’;*

Eunomia Research & Consulting Ltd (Eunomia) has been commissioned, under Framework Contract N° ENV/B.3/FRA/2017/0005 to undertake a study to support preparation of the Commission's guidance on the implementation of the general minimum requirements for extended producer responsibility schemes set out in Article 8a. This document is the final report from the study.

It is important to note that while extended producer responsibility schemes provide opportunities to encourage improved design and management of products and packaging in line with the waste hierarchy, EPR is just one of a number of tools available to policymakers. Accordingly, consideration should also be given to the role of supporting instruments (such as taxes, charges, and product standards) in delivering improved outcomes in line with the waste hierarchy. While it may sometimes appear politically expedient to seek to use EPR (and specifically fee modulation) to deliver outcomes that might better be delivered through taxation, for example, this should be resisted to the extent possible. This report thus also considers circumstances where alternative approaches should be used to complement - or indeed be used in place of – EPR.

This study focuses on four elements contained within Article 8a:

- Article 8a(4)(c) on necessary costs – the intention of which is to ensure that the financial contributions paid by producers to comply with their EPR obligations, where discharged collectively, do not exceed the costs that are necessary to provide waste management services in a cost-efficient way;
- Article 8a(4)(b) on fee modulation – which requires, in the case of collective fulfilment of EPR obligations that fees are modulated, where possible, for individual products or groups of similar products, notably by taking into account their durability, reparability, re-usability and recyclability and the presence of hazardous substances, and where available based on harmonised criteria in order to ensure a smooth functioning of the internal market;
- Article 8a(1)(d) on equal treatment – the requirement in the Directive being for equal treatment of producers of products regardless of their origin or size, without placing a disproportionate regulatory burden on producers, including small and medium-sized enterprises, of small quantities of products; and
- Article 8a(5) on monitoring and enforcement of EPR obligations, including in the case of distance sales – to ensure that producers of products and organisations implementing EPR obligations on their behalf implement their obligations, and that action is taken to prevent ‘free-riding’.

The report is laid out as follows:

- Section 2.0 first describes the *scope* of costs that must be covered by EPR schemes;
- Section 3.0 then considers how to ensure EPR schemes – and by extension producers - are not paying more than they should in respect of the costs they are required to cover, through applying the principles of ‘necessary costs’;
- Sections 4.0 to 9.0 covers existing practices, principles and appropriate criteria in respect of the modulation of fees;
- Section 10.0 addresses the concept of equal treatment; and
- Section 11.0 identifies best practice in tackling free-riding.

In addition, accompanying this final report is a document produced as part of the same study, entitled ‘Recommendations for Guidance’.

## 2.0 Waste Management Costs to be Covered by EPR Schemes

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### 2.1 Introduction

There are a wide range of activities involved in operating an effective waste management system. This section considers the scope of the waste management costs that economic operators in the supply chain (further referred to as ‘producers’ in line with the wording of the Directive) will need to cover through their payments into the EPR system in respect of the products and materials for which they are responsible.

Scope issues will be relevant both to the determination of the overall amount producers must contribute, and how the resulting funds are shared between providers of waste management services as discussed in Section 3.0 (and in particular Section 3.5).

While the approaches to collecting and treating waste may differ from country to country, some general observations can be made regarding the types of costs that are likely to need to be covered by producers.

The definition of ‘municipal waste’, to which many of the waste-related targets apply, includes both waste from households and “mixed waste and separately collected waste from other sources, where such waste is similar in nature and composition to waste from households”. This brings certain wastes from commercial and industrial sources within scope of extended producer responsibility.



Article 8a(4) states that, for all wastes that fall within their sphere of responsibility, extended producer responsibility schemes must fund certain operational costs, namely:<sup>5</sup>

- The separate collection of waste; and
- The subsequent transport and treatment of waste, including treatment necessary to meet the Union’s waste management targets.

It also indicates that certain supporting services should be funded, namely:

- Providing adequate information to waste holders regarding waste prevention measures, centres for re-use and preparing for re-use, take-back and collection systems, and the prevention of littering; and
- Data gathering and reporting regarding how many products are placed on the market, and how much is collected and recycled.

Further, it makes clear that the contributions made by producers should take into account revenues from:

- Re-use;
- Sales of secondary raw material; and
- Unclaimed deposit fees.

However, Article 8a(4)(a) states that the requirements concerning the types of costs to be covered through producer responsibility “shall not apply to extended producer responsibility schemes established pursuant to Directive 2000/53/EC, 2006/66/EC or 2012/19/EU”. Member States may, therefore, depart from the cost coverage requirements explained in this section provided that:

- In respect of end of life vehicles, under Directive 2000/52/EC, the producer responsibility requirements of Article 5 in respect of the establishment of collection schemes are met:
  - “Member States shall take the necessary measures to ensure that the delivery of the vehicle to an authorised treatment facility... occurs without any cost for the last holder and/or owner as a result of the vehicle's having no or a negative market value”; and
  - Member States shall take the necessary measures to ensure that producers meet all, or a significant part of, the costs of the implementation of [the collection] and/or take back end-of life vehicles.
- In respect of waste batteries and accumulators, under Directive 2006/66/EC, the financing requirements under Article 16 are met, principally that:

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<sup>5</sup> The question thus arises as to how account should be taken of producer responsibility schemes for commercial packaging, for example, where the waste holder pays the end of life costs, and the role of the scheme (and of the associated fees paid to the scheme) is limited to the provision of evidence. An example of this would be that of Valipac in Belgium. Such an approach would not appear to fulfil the requirements placed on producers under Article 8a(4).

- producers, or third parties acting on their behalf, must finance any net costs arising from the collection, treatment and recycling of all waste portable batteries and accumulators, and all waste industrial and automotive batteries and accumulators, collected under the requirements of the Directive;
- double charging of producers in the case of batteries or accumulators collected under schemes set up in accordance with Directive 2000/53/EC or Directive 2002/96/EC is avoided; and
- producers, or third parties acting on their behalf, must finance any net costs arising from public information campaigns on the collection, treatment and recycling of all waste portable batteries and accumulators.
- In respect of waste electronic and electrical equipment, under Directive 2012/19/EU, the financing requirements under Article 12 are met, principally that “producers provide at least for the financing of the collection, treatment, recovery and environmentally sound disposal of WEEE from private households that has been deposited at collection facilities”.

As a result of these exceptions, the principal wastes to which the provisions of Article 8a(4)(a) apply will be packaging waste, although where future directives establish producer responsibility schemes, the article may apply to them.

In order to ensure that producer responsibility obligations are met, some Member States may make use of deposit refund schemes; others may rely on municipal or other third-party collection systems; and for some material streams, Member States may prefer schemes to establish their own separate collection. The cost considerations set out in this section will be applicable to all of these approaches, but may be most relevant to situations where waste is collected through municipal systems.

## 2.2 Operational Costs

Producers should bear the operational costs of collecting and managing the material they place on the market so that this material can be recycled. The specific operational costs of waste collection will depend on the collection system that is adopted in each Member State. However, in combination, the elements of the waste collection system must be adequate to meet the targets. The operational costs are likely to include:

- Direct vehicle, staff and container costs (both capital and running costs) associated with the collection of waste for reuse or recycling, including:
  - Door-to-door collections;
  - Communal collections; and
  - Civic amenity sites or container park facilities;
- The costs of maintaining capital items such as vehicles and containers (e.g. sacks, wheeled bins, underground containers, skips);
- The costs of establishing, maintaining and running vehicle depots, intermediate sites such as transfer stations and other facilities necessary to support the collection service;

- The costs of sorting or processing waste so that it can be reused or recycled, and the costs of any preparing for reuse or recycling operations necessary to turn the waste into a raw material suitable for use by manufacturers;
- The costs of the transportation of waste that has been collected for reuse or recycling, so that it reaches final treatment;
- Corporate overheads (e.g. IT, HR, financial services) associated with operating the service;
- The management costs of marketing and selling reused items or recycled materials (if this is carried out by municipalities or other collectors, rather than by producers); and
- Any return infrastructure and counting centres associated with deposit schemes.

This is not intended as an exhaustive list. Member States should examine the operational elements of any current or planned service in order to identify all operational costs relevant to the materials for which producers are responsible. Where resources are used both to collect material that falls under the producer responsibility scheme and other material, costs should be apportioned on a reasonable and transparent basis.

Where Member States, or other directives, introduce additional targets or requirements, producers may be obligated to cover the costs of meeting them – for example, they may be required to meet operational costs associated with the collection of products that are littered or that are collected as part of the mixed waste stream.

## 2.3 Supporting Services

Producers should bear the costs of the services necessary to support the operational activities involved in collecting and managing the relevant material. The specific supporting services that are necessary to put in place will be determined in the context of each Member State, with reference to the actions that the Member State deems to be necessary to comply with the specific requirements of each EPR scheme and to meet any relevant targets. Examples of supporting services will include:

- Communications – at the level and of the type necessary to achieve the required behaviour from citizens, regarding:
  - Steps that can be taken to prevent and reduce waste;
  - Steps that can be taken to enable waste items to be reused or prepared for reuse, including the availability of centres for reuse and of takeback schemes;
  - How, what and where to sort and recycle; and
  - The prevention of litter.
- Enforcement costs – i.e. the costs of putting in place systems to ensure that producers, waste management organisations, businesses and citizens follow the rules Member States put in place to transpose the new directives into their law. For example, if a Member State puts in place a system to detect and penalise businesses that fail to adequately source separate material for recycling, as part of an overall package of measures to ensure that the targets are met, the net costs to of such a system should be met by producers. Where fines are applied

as part of the enforcement process, Member States should consider whether producers should bear the costs net of any income from fines that is retained by the enforcement body. Care should be taken to ensure that fines are imposed for deterrent effect and do not become, in effect, a form of charge placed on waste producers, which would undermine the principle of producer responsibility. In respect of the enforcement system applicable to producers themselves, it will be important to ensure that the requirement on producers to fund enforcement does not lead to conflicts of interest;

- Efficiency reviews to ensure that services are run at the lowest cost necessary to achieve the objectives and targets set out in the Directives;
- Data gathering, recording, analysis and reporting costs; and
- Performance incentives to encourage:
  - Waste prevention and reuse (e.g. a financial reward where tonnage of waste per capita is kept below an agreed target level);
  - A high recycling rate (e.g. a financial reward where an agreed target level – which may differ from place to place within a Member State – is achieved); and
  - High recycling quality (e.g. a financial reward where the proportion of non-target material in a recycling stream is kept below an agreed target level).

## 2.4 Material Value

Producers are responsible only for the net costs of waste management. Where the material that they place on the market has a value when recycled, the costs borne by producers should be offset by the value obtained from the sale of material.

One way to achieve this is to give ownership of the relevant material to producers (typically through a producer responsibility organisation), so that they can take responsibility for the sale of material and directly receive the income. However, this may prove problematic for some material streams, for example where packaging waste and non-packaging waste of the same material are collected together. Under such a system, arrangements would need to be made to ensure that producers do not incur costs, or receive income, for material that does not fall within the responsibility.

If the material sale function is fulfilled by an entity other than the producer responsibility organisation, and if that other entity retains the income from materials, the income received should be netted off the waste management costs incurred by the entity when considering the amount that producers should pay. This income figure should be net of the costs of treatment of waste (e.g. sorting or recycling), along with any intermediate transport of material.

**Example:** A waste collector separately collects packaging glass. The costs it incurs to undertake this work are €75,000 per year. In a particular year it collects 2,000 tonnes of glass, which it sells for €10 per tonne. Its net costs, for which glass packaging producers would be responsible, would be €55,000.

Where ownership of material passes from one entity to another (e.g. where a collector transfers material to a sorting provider), any payment from one entity to the other is unlikely to affect the total cost of the system, and will only be of relevance when determining the quantum of the extended producer responsibility payments each entity receives.

**Example:** A waste collector collects a mixed packaging stream at a typical gross cost of €40 per tonne. It sends material to a sorting facility, which charges the collector €20 per tonne. The sorting facility incurs costs of €50 per tonne then sells the sorted material at a basket price of €60 per tonne. The net costs of collection and sorting are €40 + €50 - €60 = €30 per tonne, which would be the costs to be borne by producers.

Where the collector or sorter has responsibility for selling the material, producers are entitled to expect them to pursue a *value maximising* approach to the sale of material – i.e. it is reasonable for producers to expect that collectors take steps to secure the maximum value they can from the sale of the material, even though the collector does not stand to benefit financially from the sale (since their net costs are covered). Reasonable value may be established by reference to data regarding the value of material (like the EUWID Packaging Markets report,<sup>6</sup> or similar data collected at the Member State level), or could be established procedurally (i.e. by reference to the process that collectors must follow to obtain value for money, such as following an open tender process for sale of the material).

## 2.5 PRO Costs

In addition, producers should bear the reasonable and proportionate administrative costs of running any PROs that are established to perform functions on the producers' behalf. PROs should be transparent regarding the costs they incur in fulfilling their functions. The extent to which it is deemed appropriate for PROs to make and distribute profit is a matter for Member States, although given the primary objectives of EPR schemes, many PROs have historically been established on a not-for-profit basis, even in schemes with multiple competing PROs.

## 2.6 Observations on Costs

### 2.6.1 Capital Costs

There will in some cases be substantial capital costs associated with putting in place new services necessary to meet the targets. Typically, under contractual arrangements for waste collection, capital expenditures (and other costs of capital, such as interest) might be recovered over the lifetime of the asset. However, where the necessary service changes to meet the targets require substantial capital costs, and these cannot feasibly be met by other means, it may be reasonable for Member States to require producers to

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<sup>6</sup> <https://www.euwid-packaging.com/>

fund initial capital investments. In some cases, producers may choose to fund capital investments in order to ensure that adequate systems are put in place. However, where producers bear capital costs up front, Member States should ensure that they are not also charged capital contributions or depreciation during the lifetime of the resulting assets.

### **2.6.2 Overheads and Shared Costs**

Where costs (e.g. overheads) are shared between elements of the collection system that are subject to producer responsibility and elements that are not, Member States should ensure that there is a reasonable process of apportionment in place to make sure that the costs passed on to producers are fair in respect of the material or waste stream being managed. The share of costs that is borne by producers should be reasonable and proportionate. A proportionate share of costs might be determined by reference to the weight or volume of the material that is collected (depending on which is the principal driver of costs) that falls within the remit of producer responsibility.

Collection systems will sometimes involve collecting materials, some of which are covered by EPR schemes and some of which are not. An example of this would be paper and card – some of which might be packaging, and some of which might be non-packaging in origin. Member States will need to put in place arrangements to determine the correct allocation of costs to producers in such circumstances.

### **2.6.3 Wider Costs**

Member States may choose to expand the scope to include some costs not explicitly required to be covered under the Waste Framework Directive, such as the costs of managing material in residual waste or litter. Under Article 8 of Directive 2019/904, Member States are already required to apply extended producer responsibility for single use plastics explicitly to cover the costs of managing litter, and the costs of treating those single use plastic products that are discarded by users and collected through public mixed waste collection systems.

Where Member States choose to implement such measures, the costs of managing waste that is collected through the residual waste management or litter collection systems should be assessed using a similar approach to that described above in respect of collection for recycling.

### **2.6.4 Charges to Waste Holders**

Many Member States have competitive markets for collections, especially of commercial municipal waste. In such systems, the person responsible for the material at the point when it becomes waste (the “holder” of the waste), rather than the business that placed it on the market (the producers), pays for the costs of its collection, treatment and disposal.

This approach offers a range of service provision for waste holders, who will individually contract with a waste collector. Competition between waste collectors also helps to control costs, although there are issues regarding the overall efficiency of such systems.

However, such a system is unlikely to be compatible with the extended producer responsibility requirement that the full net costs of waste management should be met by the original producers of packaging and products that fall within scope, rather than paid by the waste holder.

If producers are to bear the costs, it will be difficult to maintain a competitive market for waste management services in respect of material covered by extended producer responsibility. Member States will therefore need to revisit waste management systems in which waste holders bear significant costs for this material. Possible alternative systems include:

- Giving municipalities responsibility for the collection of all relevant waste in their area, funded by producers;
- Arranging for periodic procurement of a collection contractor to undertake all of the collections of relevant waste in a defined geographical area (the “franchise” or “zoning” model used in some cities in the United States, such as Los Angeles), funded by producers; and
- Giving responsibility to PROs to make collection arrangements, whether directly, through municipalities, or via a contractor.

It may be appropriate to make different arrangements for household waste from those put in place for commercial and industrial waste. Member States can consider maintaining the current choice of collection providers, but requiring that the costs are met by producers; however, this system is likely to lead to higher costs for producers than are necessary.

Direct charging of waste holders can be a tool to encourage waste prevention and provide a financial incentive to recycle. It remains open to Member States to allow for charging for wastes not covered by extended producer responsibility (e.g. mixed residual waste, biowaste), which also tend to be streams where the waste holder has greater control over the volume of waste they produce. It would also be possible to apply financial incentives (e.g. taxes) in respect of the generation of wastes covered by producer responsibility, so long as the resulting income is not used to fund waste management activities that should be paid for by producers.

### **2.6.5 The Specific Example of Certain Current Schemes for Packaging Waste from Commercial and Industrial Sources**

There are currently examples of producer responsibility schemes for commercial packaging where the waste holder pays the end of life costs, and the role of the scheme (and of the associated fees paid to the scheme) is very limited. In some cases, schemes provide some support to material prices to encourage recycling; in other schemes, funding is limited to the provision of evidence to demonstrate that material has been recycled. Such an approach would not appear – on its own – to fulfil the requirements placed on producers under Article 8a(4).

Article 8a(4) requires that producers meet the prescribed share of the net costs of the management of wastes that are subject to producer responsibility. Article 8a envisages

that, in most cases, this will mean meeting the full net costs. However, where justified by the need to ensure proper waste management and the economic viability of the extended producer responsibility scheme, Member States can reduce the share borne by producers, so long as it does not fall below prescribed levels (see Section 3.2.1).

Any Member State establishing producer responsibility schemes pursuant to Article 8a must ensure that schemes (whether individually or – in cases where there are multiple schemes for a particular waste type – collectively) cover all aspects of the necessary costs of managing relevant waste from all sources that fall within the scope of the objectives and targets in the Directives, in line with this guidance.

Where schemes exist that fulfil only partially fulfil the requirements of the Article 8a (4), Member States can address this by:

- expanding the existing scheme, so that it ensures that producers cover (the requisite share of) the necessary costs; or
- supplementing the existing scheme with others so that, within the Member State's overall producer responsibility system, producers cover (the requisite share of) the necessary costs.

### 2.6.6 Use of Models

In order to allow for a systematic and consistent approach to be applied to establishing the costs of service provision, Member States may wish to develop models that enable the cost of the waste management activities to be estimated. Such models would need to be based on real data, reflecting the typical costs of service provision and allocating shared costs on a reasonable basis.

Such a model would need to take account of relevant differences between the costs incurred by those engaged in waste management activities in different parts of the Member State:

- For waste collection activities, examples of factors that would need to be taken into account would include:
  - The collection method employed, which should be reasonable given the nature of the properties from which waste is to be collected;
  - The expected number and type of vehicles and staff required to undertake the collections, which would need to reflect the expected efficiency of collections, given the geography and housing type in the area covered;
  - Fuel costs, which may vary across the Member State;
  - The cost of the containers necessary to deliver the collection system;
  - Differences in local costs, especially for land (which affects depot costs) and labour; and
  - Any income from the sale of recyclable material that is retained by the collector.
- For transfer, sorting and treatment facilities:
  - Differences in the costs of land in different areas;



- Differences in the costs of acquiring or maintaining equipment;
- Differences in disposal costs;
- Differences in labour costs; and
- Any income from the sale of recyclable material that is retained by the operator.

Member States may wish to develop standard models and assumptions suitable for the waste management systems that are commonly used within their territory. Alternatively, there are examples of models that have already been developed which could be procured and adapted for the purpose, including, (in the UK) WRAP’s KAT model and (in Spain) the cost model developed by producer responsibility organisation ECOEMBES.

## 3.0 Necessary Costs

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### 3.1 Introduction and Definition

Section 2.0 considered the scope of the costs that must be covered by producers. This section addresses the question of how to determine whether the costs borne by producers “do not exceed the costs that are necessary to provide waste management services in a cost-efficient way.” (Article 8a(4)(c)). Where they implement producer responsibility schemes, Member States are required to design them so as to ensure that the financial contributions paid by the producer of the product are sufficient to comply with the obligations of Article 8a(4) while not exceeding “the costs that are necessary” to do so.

“Necessary costs” may be understood as the net operational and management costs of a system for the handling – as a minimum – separately collected recyclable material, from collection through to the completion of the recycling operation, together with the costs of supporting activities such as communications and data acquisition and management. Such a system must be **adequate** to achieve relevant targets and **acceptable** to those who must use it.

Costs are only to be considered “necessary” if they relate to expenditures that:

- are **attributable** to the delivery of the relevant services;
- reflect the delivery of a system which is **efficient** within the geography, housing types and demographics in whose context it operates;
- can be appropriately assigned to the products placed on the market by the producer;
- reflect a system that is **value maximising** as regards the costs of material management and the value obtained from the recyclable material; and
- are arrived at in a way that provides a reasonable level of **transparency**.

## 3.2 Legal Basis and Application

This section examines the targets and obligations, compliance with which Member States must ensure that producers fund through extended producer responsibility schemes. Costs incurred in pursuit of these targets potentially fall within the scope of “necessary costs”.

### 3.2.1 Source in Directives

At Article 8a(4)(a), the Directive explains the aspects of the waste management system that the financial contributions must cover. It requires that extended producer responsibility schemes cover the costs of actions “necessary to meet the Union waste management targets”.

While the concept of producer responsibility is well-established in EU law, the language of “necessary costs” is new. It refers to two related concepts of necessity.

- Article 8a(4)(a) states that the contributions required of producers must cover the costs of waste management activities “necessary to meet the Union waste management targets”; and “costs necessary to meet other targets and objectives” referred to in Article 8a(1). Referring back to Article 8a(1) these are the waste management targets set in:
  - Directive 2018/851 itself;
  - Directive 2008/98/EC (on waste)
  - Directive 94/62/EC (on packaging and packaging waste); and
  - other quantitative targets and/or qualitative objectives, set by individual Member States, that are considered relevant for the extended producer responsibility scheme.

While Article 8a(1) also mentions targets set by Directive 2000/53/EC, 2006/66/EC and 2012/19/EU, the requirements of Article 8a(4)a regarding cost coverage in EPR schemes do not apply to EPR schemes established under these three directives.

- Article 8a(4)(c) explains that Member States must ensure that the contributions required of producers:

*“do not exceed the costs that are necessary to provide waste management services in a cost-efficient way. Such costs shall be established in a transparent way between the actors concerned.”*

“Necessary costs” are therefore the costs of the waste management-related activities needed to meet certain targets and objectives, provided that those activities are shown to be undertaken cost-effectively.

Under normal circumstances, producers must meet the full necessary costs of meeting the relevant targets. However, Article 8a(4)(i) foresees that, where justified by the need to ensure proper waste management and the economic viability of the extended producer responsibility scheme, a Member State may depart from requiring the full costs to be met, provided that at least 80% of the necessary costs are covered by the EPR

scheme and that the remaining costs are borne by original waste producers or distributors. In the case of extended producer responsibility schemes established before 4 July 2018 to attain waste management targets and objectives solely established in Member State legislation, Article 8a(4)(iii) requires only that the producers of products bear at least 50% of the necessary costs.

### 3.2.2 Applicable Targets and Objectives

As highlighted above, the costs that producers must meet are those necessary to meet certain targets and objectives. It is important to clarify which targets are referred to.

Numerous objectives are stated in the Waste Framework Directive. These are expressed in quite general terms (e.g. to minimise the negative effects of the generation and management of waste on human health and the environment, to move towards a European recycling society, the protection of the environment and human health). It is challenging to clearly define costs that may reasonably be attributed to producers in the service of achieving these objectives, and in practice the focus of extended producer responsibility will be on the achievement of the targets.

The first indent of Article 8a(4)(a) of the WFD requires Member States to ensure that the producer covers the necessary costs for the products that the producer puts on the market that relate to “separate collection of waste and its subsequent transport and treatment, including treatment necessary to meet the Union waste management targets, and costs necessary to meet other targets and objectives as referred to in point (b) of paragraph 1”.

Article 8a(1)(b) requires Member States to “set waste management targets, aiming to attain at least the quantitative targets relevant for the extended producer responsibility scheme as laid down in this Directive, Directive 94/62/EC, Directive 2000/53/EC, Directive 2006/66/EC and Directive 2012/19/EU of the European Parliament and of the Council, and set other quantitative targets and/or qualitative objectives that are considered relevant for the extended producer responsibility scheme”.

Article 8a(1)(b) makes a clear reference to the targets set out in Directive 2008/98/EC, which are for municipal waste and for construction and demolition waste. No EPR scheme has been proposed for construction and demolition waste, so this refers to the targets for municipal waste. Packaging is a major component of municipal waste, so the mandatory targets for municipal waste are of relevance to the EPR schemes on packaging. Therefore, when Member States set targets for the EPR schemes for packaging, they should ensure that those targets ensure that the contribution of the relevant packaging waste stream is sufficient, alongside appropriate contributions from non-packaging materials, to enable the municipal waste recycling targets to be met. In addition to the targets and objectives mentioned above, Directive (EU) 2019/904 on the reduction of the impact of certain plastic products on the environment adds further relevant targets and objectives. Member States should ensure that the necessary costs of achieving these is met by the relevant EPR schemes. In so doing, the approaches described in the sections 3.3 and 3.5 may be applicable for how cost-efficiency might be determined in respect of activities such as litter clean-up.

Further, in line with Article 8a(1)(b) of the WFD, Member States may set other relevant quantitative targets and/or qualitative objectives. Member States should ensure that the necessary costs of achieving these is met by the relevant EPR schemes. Member States must also ensure that the waste management systems that are put in place are consistent with the wider framework of waste legislation, including Article 4 of Directive 2008/98/EC (the waste hierarchy).

### 3.2.3 Applicable Waste Streams

The recycling targets defined in Directive 2008/98/EC set a minimum level of recycling performance for municipal waste. In addition, Directive 94/62/EC sets minimum levels of recycling for different packaging streams. Member States must ensure that these targets are met at a national level.

In addition, the separate collection obligations laid down in Article 10(2) and (3) and Article 11(1) of the Directive 2008/98/EC must be complied with, notwithstanding the minimum recycling targets. As such and in accordance with Article 8a(4)(a), the cost of separate collection that must be covered by EPR schemes is distinct from the obligation to cover the costs of meeting targets. This is reflected in Article 7(4) of Directive 94/62/EC on packaging and packaging waste (PPWD), which refers only to Directive 2008/98/EC's Article 11(1) (concerning source separation) and not to Article 11(2) (concerning targets). The effect of this may be that if the cost separate collection exceeds the cost of meeting the relevant targets, it is the cost of separate collection that defines the minimum necessary cost to be covered by producers under the scheme.

Under the directives, separate collection of packaging waste is required as a general rule, subject to limited derogations. The costs of this separate collection have to be covered by the EPR schemes in accordance with the first indent of Article 8a(4)(a).

Member States have some flexibility in designing their separate collection system so as to best fit local circumstances, and may make use of a range or combination of systems to achieve this, including door-to-door collections, bring banks, civic amenities sites. The resulting system must, though, result in waste being *de facto* separately collected. If a substantial amount of waste that is subject to separate collection obligations continues to enter the mixed waste stream, this is likely to call into question whether the separate collection obligations have been complied with.

However, in order to meet the targets (and/or the other objectives, whether set by the directives or by the Member State), it may in some cases be necessary for steps to be taken regarding the management of mixed, residual waste – for example, sorting of this material to extract recyclable packaging. Where this is the case, the costs of those waste management operations have to be covered by producers, in accordance with Article 8a(4)(a).

Some Member States already include, under packaging schemes, some costs associated with dealing with unrecycled packaging (e.g. the costs of managing packaging when it enters the residual waste stream or are littered). Although Article 8a(4) does not require

the inclusion of such costs, neither does it preclude their inclusion; indeed, their inclusion is encouraged by Article 14, which states that:

*“Without prejudice to Articles 8 and 8a, Member States may decide that the costs of waste management are to be borne partly or wholly by the producer of the product from which the waste came and that the distributors of such product may share these costs.”*

“The costs of waste management” in Article 14 are to be understood as including the costs of managing mixed waste streams.

### 3.2.4 Geographical Application

At a regional or local level, the application of the waste hierarchy and the obligations on separate collection may in some cases result in higher or lower recycling levels. However, Article 8a(3)(a) obliges Member States to ensure that any extended producer responsibility arrangement has:

*a clearly defined geographical, product and material coverage without limiting those areas to those where the collection and management of waste are the most profitable.*

Recital 25 of Directive 2018/851/EU further clarifies that continuity of waste management services throughout the year has to be ensured, even if the targets and objectives are met. Therefore, any Member State’s extended producer responsibility arrangements must ensure that appropriate waste management services are put in place across the entirety of the Member State’s inhabited geographical area, to a sufficient standard to ensure that both the separate collection requirements and the relevant targets are met.

### 3.2.5 Interpretation of Application

Our understanding of the obligation described in the sections above is as follows. Under the specific directives mentioned above, Article 8a(4)(a) makes producers responsible for meeting the costs of reusing and/or recycling the products and packaging that they place on the market and schemes must at least meet the specific targets and objectives in the relevant directives.

However, if meeting the wider objectives and targets necessitates recycling a greater proportion of the material for which producers are responsible than is mandated by the specific targets, producers remain financially responsible for cost; their financial responsibility does not end at the point when the specific target is met, especially where the recycling activity contributes to the meeting of other targets. For example:

- Where a PRO directly commissions the provision of on-street containers for packaging, but in order to meet the specific targets, door-to-door collection by municipalities is also required, the principle of cost coverage would apply to all of these services. In other words, the PRO would not be able to fully fund the cost of its own on-street container provision and then just the proportion of the costs of

the door-to-door collections required to ‘top up’ the tonnage required to meet the specific target. Cost coverage would apply equally to the whole system necessary to achieve the targets.

- Taking this example further, where the municipality commissioning the door-to-door service, in order to meet the WFD targets for municipal waste recycling was required to perform at a level that exceeded the targets under the PPWD in respect of packaging, the necessary costs would still be the responsibility of producers. In this way, the fundamental principle of end of life cost coverage is respected, in a way that is consistent with the requirement for the inclusion of *“treatment necessary to meet the Union waste management targets”*.

These costs are not limited to operational expenditures (collection, transport, and treatment/processing, net of material revenues and any other income (e.g. unclaimed deposit fees)). They also include the costs of providing information to waste holders to let them know how to manage their waste appropriately and gathering data on waste management to show the extent to which the targets are being met. In addition, producers must meet the costs of any organisation(s) or systems that are put in place to co-ordinate extended producer responsibility, which we refer to as Producer Responsibility Organisations (PROs). An indicative list of the types of cost that are within the scope of extended producer responsibility is provided in Section 2.0.

It is reasonable to infer that the costs for which Member States must make producers responsible for are, as a minimum, the costs of collecting, treating and managing the wastes for which they are responsible – across the territory of the member state – so that it can be reused or recycled. Member States may, of course, draw the scope of the costs for which producers are made financially responsible more widely. For example, some Member States already include, under packaging schemes, some costs associated with dealing with unrecycled packaging (e.g. the costs of managing packaging when it enters the residual waste stream or are littered). Although Article 8a(4) does not require the inclusion of such costs, neither does it preclude their inclusion; indeed, this appears to be encouraged by Article 14, which states that:

*“In accordance with the polluter-pays principle, the costs of waste management, including for the necessary infrastructure and its operation, shall be borne by the original waste producer or by the current or previous waste holders.”*

While this report does not address such wider costs in detail, many of the principles that it examines would be applicable, and hence readily extended to include them.

### **3.3 Approach to Determining “Necessary Costs”**

This section relates principally to the calculation of the overall scale of costs to be met by producers.

Establishing the necessary costs of waste management within any particular Member State must achieve two goals in order to make extended producer responsibility schemes effective:

- The system must ensure that the correct total amount of financial contributions is gathered from producers to fully cover the net costs of managing their waste within the territory of the Member State (subject to the scope of the scheme in the relevant Member State), and that these costs are sufficient to support activities that deliver the targets described above; and
- The system must provide a method of allocating funds to waste collection and sorting operations, which will often be delivered by third parties such as municipalities and waste management companies, and others engaged in the transport, processing and treatment of waste.

Section 2.0 outlines the types of costs that should be included within the calculation. It may be possible to estimate costs at a national level. However, any cost estimate should take account of variations in costs within the Member State – for example, higher population density may reduce costs in some areas relative to more sparsely populated areas, or labour costs may be greater in some parts of the country than others. As these differences can often be significant, there may be benefits in establishing costs at a local level, and building up a national assessment “from the bottom up”.

### 3.3.1 Definition

The Commission may wish to put forward a definition of the principle to provide clarity on the aims and scope of the contribution to be made by producers, reflecting the considerations discussed above. An outline definition might therefore be:

*“Necessary costs” are the net operational and management costs of an **adequate** and **acceptable** system for the handling separately collected recyclable material, from collection through to the completion of the recycling operation, together with the costs of supporting activities such as communications and data acquisition and management. Costs are only to be considered “necessary” if they relate to expenditures that:*

Under Article 8a(4)(a)

- Are **attributable** to the delivery of the relevant services – ones that can be **assigned**, with relative confidence and accuracy, to the costs implied by the products placed on the market by producers of certain products;
  - Reflect a system that is **value maximising** as regards the costs of material management and the value obtained from the recyclable material;
  - Are arrived in a way that provides a reasonable level of **transparency**;
- and

Under Article 8a(4)(c)

- Reflect the delivery of a system which is **efficient** within the context of a particular locale.

This definition would need to be published alongside brief commentary on the meaning of the highlighted terms. We discuss each of the terms in the sections below

### 3.3.1.1 Adequacy

The design of a waste management system is a critical determinant of its cost. Approaches to collection and treatment differ greatly across Europe. In some cases, the public bodies that have been responsible for collecting waste have been unwilling, or unable (for example, because of financial constraints), to adopt more costly, more effective systems.

In order to comply with Directive 2018/851, the design of a system in any particular case should be suitable to perform at a level that will deliver a level of recovery that:

- Meets the specific waste stream recovery targets set out in the Directives; and
- Contributes sufficiently to meeting the wider waste management targets, in line with the expectations of the Member State regarding how the overall targets will be met.

It must also comply with the Waste Framework Directive's requirements regarding the separate collection of materials for recycling. Only a system that is designed in such a way that it is capable of meeting the targets and objectives can be considered **adequate**.

It may also be reasonable for a Member State to require producers to fund services that are thought to be capable of exceeding the targets, rather than just to barely meet them, in order to minimise the risk that the targets are not in the end achieved and to contribute as necessary to meeting wider Union targets, such as those in respect of municipal waste recycling. This is because:

- It is difficult to design a system to achieve exactly a target recycling rate. In order to maximise the chance of achieving a target, it may be necessary for Member States to implement and fund a system that has the capacity to exceed it. To do otherwise heightens the risk of failure (and, at a Member State / producer level, negative financial consequences). If this results in collection systems that collect for recycling more material than is necessary for producers to meet their specific targets, it would appear contrary to the aims of EPR if public funds, rather than producers, bore the costs associated with the collection, treatment (etc.) of material for recycling over and above the necessary minimum.
- In most instances, the nature of the delivery of services will be such that it is difficult to identify a configuration that 'just' meets a given target, and does not exceed it. The question arises as to whether producers should be expected to meet all the costs for the necessary service, even if recycling targets are exceeded, or only a defined fraction, reflecting the fact that the services in place exceed the target the producers are meant to achieve. It is worth considering that funding only 'up to target' could leave service providers with a funding gap which grows as their performance improves: this would seem to be unfair;
- If producers are only required to fund 'up to' target, this could open the way for a degree of cherry-picking where producers pull away from funding, for example, collections in more rural, or very dense urban areas, where costs of service provision may justifiably be higher in order to achieve a given level of performance or service.



A Member State (preferably in discussion with producers and waste management organisations) may take the view that it is reasonable to expect some regions to achieve higher recycling rates than others (e.g. due to differences in demographics or housing stock). However, Member States should bear in mind the requirement of Article 8a(3)(a) that producers should not limit the geographical scope of their responsibility to areas “where the collection and management of waste are the most profitable”.

Producers should be required to contribute resources on the basis that they will provide for **adequate** collection systems in each area of the Member State. Aside from the derogations allowed under Article 10 of the WFD, the requirements for separate collection apply to the whole of each Member State; and the wider targets will generally require high performance to be achieved across the Member State. Although it is acknowledged that performance will vary between areas, an adequate service has to be provided across each Member State, rather than, for example, only in the areas of a Member State where a service is cheapest to provide.

Making collection systems **adequate** may necessitate greater costs being incurred to provide services in some locations than in others. For example, where citizens are difficult to engage in recycling due to particularly diverse or transient populations, there may be a need for more expenditure on communication, perhaps even including door-to-door visits to advise citizens regarding how to use the collection system correctly. These additional costs should be reflected in the approach to establishing what costs must be met by producers, and in the distribution of funds, so as to ensure that services in all parts of the Member State are adequately funded.

Where additional costs have to be incurred in order to meet the local share of targets, these costs should be recognised to be necessary in order to achieve the targets. Service design should be reviewed periodically, especially where the expected level of performance is not being achieved. Such a review may result in a decision that the service model needs to be revised, or that additional training, support or communications are required in order to enable the targets to be met. The costs of such additional effort should be considered ‘necessary costs’.

### 3.3.1.2 Acceptability

The design of collection system should take account of local circumstances, and be reasonably convenient for citizens to use. Collection systems should be **acceptable** in terms of societal and industry norms in the Member State, not just to producers.

Making collection systems **acceptable** may necessitate greater costs being incurred to provide services in some locations than in others. For example:

- Where it is impractical for households to store multiple, large containers at home, it may be necessary to collect material more frequently.
- In areas that regularly experience hot temperatures, it will be problematic to use reduced residual waste collection frequency as a means of optimising collection cost and encouraging citizens to recycle, which may make it more expensive to achieve high levels of recycling.

- Where citizens are difficult to engage in recycling due to particularly diverse or transient populations, there may be a need for more expenditure on communication, perhaps even including door-to-door visits to advise citizens regarding how to use the collection system correctly.
- Amongst the factors that shape the design of the system that is funded by producers are the operational and social norms in different member states. In Scandinavia, for example, collection systems that rely on manual handling are not used, and even where manual handling might be economically advantageous, a system that avoided manual handling would not exceed the necessary costs.

The additional costs of a service that is acceptable, over one that might be operationally possible but unacceptable, should be reflected in the approach to establishing what costs must be met by producers, and in the distribution of funds, so as to ensure that all parts of the Member State are funded so as to deliver an acceptable level of service.

Several Member States have introduced a mandatory or voluntary minimum level of collection service that citizens can expect, or have specified a preferred design for collection systems. Member States may wish to consider whether, in their case, standardisation of this type would help to:

- Avoid each municipality having to individually research, assess and decide upon the design of its services;
- Ensure that residents of all municipalities receive an adequate level of service;
- Avoid disagreements with producers over the design of the service appropriate to a particular municipality;
- Avoid disagreements over the correct balance between source separation and subsequent sorting, thereby helping to simplify and standardise infrastructure needs; and
- Facilitate communication regarding recycling at a national (or even European) level.

Adoption of a preferred service model may be a reasonable requirement to ensure that all areas receive an **acceptable** level of service; and the costs of delivering that service model may be considered ‘necessary’, even where it may not be the cheapest possible way to achieve the required targets within a particular municipality.

Member States may also wish to issue research-based guidance on the collection systems that are likely to be most effective, having regard to the different circumstances that may apply in different geographical areas. The analysis behind this guidance may also inform the design of the modelling that helps to determine the appropriate financial contributions and allocations of funds between waste management organisations.

### 3.3.2 **Attributability and Assignment**

The bodies delivering recycling services for producers may do so as part of a wider suite of waste services. Combining the collection of material that is subject to EPR with the collection of other material is likely to help reduce collection costs over all, and increase convenience for citizens (e.g. where packaging and non-packaging paper are collected

together). It can also allow a wider range of economic instruments (e.g. pay as you throw, landfill tax) if the services required to meet producers' obligations are met through integration into a wider municipal service. However, it can make it more difficult to attribute to the recycling part of the system its proper share of some costs (e.g. where overheads, sites, vehicles and/or employees are shared between the EPR-funded recycling service and other operations). While producers should pay a proportionate contribution to such costs, they should be required only to meet the costs of a system that are reasonably **attributable** to the services needed to meet the targets, unless the Member State has widened the scope of producer responsibility.

Many producer responsibility schemes cover a range of products that vary in the materials they contain and how readily they can be recycled. In these cases, where collection and recycling services are being offered for a range of products, the allocation of costs to specific types of product might be necessary so that producers of one product type are not cross-subsidising producers of another. In such cases, producers need to be assured that costs are appropriately **assigned** and that no producer is subject to costs that are substantially greater than necessary to manage the waste arising from their products. A similar issue relates to packaging where the scope of material excludes non-packaging paper, which is often collected alongside packaging materials.

### 3.3.3 Value Maximising

The revised Directive makes clear that the costs that producers should bear should be considered net of revenues associated with the sale of recyclables, and of unclaimed deposits. It is therefore important that – if producers do not themselves undertake the task of marketing materials – those responsible for doing so achieve the best sale prices that they reasonably can, through effective engagement with the market. The system of collection and treatment should be **value maximising**, having regard to net costs.

### 3.3.4 Transparency

The revised Directive speaks directly to the matter of establishing costs in a **transparent** way between the relevant actors. Where considerations such as commercial confidentiality mean that it is impractical to achieve complete transparency regarding costs, the process by which the costs are arrived should be transparent, so that producers have assurance regarding the outcome.

### 3.3.5 Efficiency

While the foregoing sections relate to the requirements of Article 8a(4)(a), the issue of efficiency is raised under Article 8a(4)(c). It therefore applies to Directives that are outside the scope of Article 8(a)(4)(a).

The issue that is addressed through the requirement that the costs to producers “do not exceed the costs that are necessary to provide waste management services in a cost-efficient way” is the concern that producer responsibility organisations and/or service delivery bodies might run services inefficiently, so that the cost of delivering the target level of performance is greater than it needs to be.

Producers should be required only to meet costs the costs of a system that is *efficient*, at least as compared with systems in operation elsewhere in the Member State or in Member States that are broadly comparable. This issue might make it especially important to benchmark costs, especially in those cases where public sector contractors are the incumbent service providers, and where they have not been exposed to competition in the marketplace.

The issue of how efficiency might be established is not straightforward. Much of the thinking that has gone into the development of current practice in the management of producer responsibility schemes has focused on how to demonstrate efficiency. In section 3.4 we discuss the findings of our research on this topic. Having reflected on current practice, we return to the issue of how Member States might ensure that the services that are funded by producers are demonstrably efficient in Section 3.5.

## 3.4 Current Practices in Applying ‘Necessary Costs’ Across Europe

### 3.4.1 Overview

While the concept of “necessary costs” is new to the revised Waste Framework Directive, in practice producer responsibility schemes have been looking to achieve the maximum benefit from the minimum financial inputs for many years. The study team sought to identify practices in existing producer responsibility schemes that applied concepts similar in nature to the principle of “necessary costs” so as to find examples of good practice to echo and common problems to avoid in the application of Article 8a.

To obtain evidence, the project team undertook the following activities:

- **Stakeholder workshop:** During the first stakeholder workshop, there was a brief discussion of the key issues related to determining necessary costs.
- **Literature Review:** Eunomia sought out documents that set out the basis for financial transfers from producers to others, but in practice there were few publicly available details. The principal document available was the manual used by Ecoembes to establish the basis for payments made to municipalities in Spain for their services in recovering light packaging, which we have taken into consideration in preparing the following analysis.
- **Survey:** More detailed information was gathered directly from relevant PROs and relevant authorities (such as Environment Ministries and Environment Agencies) through a survey regarding the types of costs that producers were required to cover, and any measures (whether written into law or as a matter of practice) adopted to ensure that producers bear only necessary costs. Separate requests were made in respect of schemes relating to packaging, WEEE and batteries and accumulators. Eunomia received a total of 38 responses from Member State authorities, and 42 from PROs. Because separate requests were made regarding three different waste types, multiple responses were received from some Member States.

- **Follow up information requests:** Eunomia followed up by email or telephone with some survey respondents and other interested parties whose responses indicated that they might be able to provide further information that would be of use in developing an approach to necessary costs.

The evidence review revealed a range of practices. Some PROs had grappled to some extent with the question of how to provide producers with an assurance that they are being held responsible only for necessary costs. There are lessons from the survey that can be carried forward into guidance on establishing necessary costs, but no one scheme provides an ideal model.

In this section we explore some of the themes uncovered in the research.

### 3.4.2 Direct Delivery Compliance

In a small number of cases, producers have direct responsibility for undertaking or arranging collections and/or treatment, rather than collections being run centrally through EPR schemes, or relying on municipalities or other organisations to fulfil these responsibilities. A prominent example is the WEEE scheme in Germany.

*“The producers/authorised representatives are required to provide appropriate containers for the WEEE collection from the municipalities. The municipality notifies the [Elektro-Altgeräte Register] EAR foundation of any full container. The EAR foundation assigns one of the registered producers to pick up that container in that specific municipality (and properly dispose of the WEEE according to the waste hierarchy and provide an appropriate empty container in exchange). Since the producer provides the empty container itself, it is up to every producer to find a cost-efficient solution. The responsible producer is determined by the EAR foundation according to a scientifically acknowledged method of calculation. The producer is free to hire a third party to help fulfil its obligations (to pick up the WEEE container from the collection point and replace it with an empty one) in an appropriate way.”*

Umweltbundesamt (UBA) – German Environment Agency

In such a scheme, the producers are directly responsible for finding a collection and treatment solution that they are satisfied represents good value for money. The risk of producers being dissatisfied with the cost-effectiveness of services is low – although such a system has little opportunity to benefit from economies of scale, so the overall costs may be higher than might be achieved through co-ordination.

This model can be effective where the number of containers is relatively small – where, for example, collections are via producer-run take-back sites or municipal drop-off centres; or where the product requires specialised treatment. In such scenarios, the producers incur costs directly, and are at liberty to change the arrangements if they believe that the targets can be met in a more cost-effective way. However, it is difficult to envisage how it could be applied cost-effectively in other contexts, such as door-to-door collections of materials such as packaging. Despite its high level of transparency, it is unlikely to be an *efficient* way of organising the delivery of waste collection services for

high volume materials (though it may have a role in relation to specialist materials that arise in small quantities (e.g. high-value WEEE, coffee pods).

### 3.4.3 PROs Pay Third Parties

In many cases, PROs obtain services from third parties on behalf of their members. This may be through direct procurement of services, or through payments to entities such as municipalities that undertake or procure service provision, but which are not directly responsible to the PRO.

Where PROs procure services directly, this typically involves the PRO specifying the services that it wishes to obtain, and then commissioning them through competition.

For example, in Germany the EPR systems carry 100% of the responsibility of financing and organizing collection, sorting and recycling of packaging to meet national targets. PROs must tender for sorting capacity to cover their registered tonnage, which may also include trading of materials – although this is sometimes undertaken by the PROs directly. However, there are regular tenders for collection and sorting contracts.

The German system operates collection contracts with a three-year duration. Municipalities can participate in tenders, but (with the exception of a small number of low-value aspects of service provision, such as making available sites for containers) have to compete with private waste management companies. The costs of the resulting contracts for collection are shared by PROs according to their market share. The PROs define a lead negotiator by “drawing lots” according to their market share (so, a PRO with 10% market share would be in charge of 10% of the randomly drawn collection areas being negotiated in a particular year). This lead negotiator negotiates on behalf of all PROs, and is incentivized to achieve a good financial outcome by being required to cover at least 50% of the collection cost in the tendered area.

In other cases, PROs make payments to third parties indirectly, through supporting the value of recycled materials. For packaging, the UK and Poland operate systems of tradeable packaging recovery notes (PRNs) whose value is determined by market forces. Where too little material is being collected to meet the recovery target for a particular type of packaging, the value of PRNs increases, incentivising greater captures and efficient recycling. Where collection and treatment systems are yielding sufficient tonnage, the value of PRNs is low.

In some cases, this activity is carried out by a single, national, PRO; in other cases, there are multiple PROs, each commissioning or funding services on behalf of the organisations that choose to join them.

In these types of arrangements, assurance regarding costs is provided through two main mechanisms:

- 1) The PRO can utilise competition to obtain the best price; and
- 2) Producers can hold the PRO accountable for the costs it incurs on their behalf;

*We must buy in our services via public procurement.... The owners of an EPR company are packaging organisations who have the right to check our operations and make sure the costs do not exceed the necessary costs.*

Estonian Recovery Organisation

*Collection, sorting and treatment costs per WEEE type are tendered on regular basis. They vary per treatment operator (supplier) and their approach. Example: One operator can invest in highly special shredding and sorting line, and the other can have very manual disassembly process. The operators will then have ultimately different competitiveness in different types of WEEE. The EPR schemes have to optimize the consumer collection with different treatment operators and the price differences of different WEEE types can vary.*

ERP Finland

*The Polish system, like the UK's, is based on PRNs trade i.e. PRNs market prices do not reflect waste management costs.*

Rekopol Organizacja Odzysku S.A., Poland

It is also possible to utilise competition between PROs as a means of providing producers with assurance that, if the costs they would incur under one scheme appear high, there may be alternatives available. Where there is a single PRO, producers can be concerned that their monopoly position fails to incentivise the PRO to keep costs to a minimum. Some respondents – especially those already closely involved in the operation of competitive PROs – mention the importance of competition between PROs in providing assurance regarding costs; however, this perception is not necessarily shared universally.

Where there are multiple PROs, this may give rise to duplication of management costs and infrastructure, although competition can be a driver of efficiency. However, the costs of PRO administration are small compared with the costs of the waste management services they secure for their members. While efficient administration may help to contain costs, it is unlikely to result in significant differentiation in fees.

Provided that all PROs are required to offer services of a good standard, the principal way in which they may be able to achieve price differentiation would be through effective commissioning/procurement.

The system of indirect payments in its Polish and UK instances does not ensure that producers meet the costs of collecting and sorting recycling. Instead, it is focused on making sure that the targets are met by acting as a supplementary source of funding to established waste management systems that are funded by other means.

The system in the Netherlands allocates payments on the basis of material recycled, but instead of setting the level of support based on market principles, the amount available reflects the total cost of waste management, on average. This ensures that the total cost of recycling is met, but tends to allocate producer responsibility payments inefficiently.

Unless the targets can be met by focusing on areas from which collections can be accomplished relatively cheaply, material price support would need to rise to the levels necessary to incentivise the required level of recycling in more challenging municipalities. This would result in producers paying more than the necessary costs of waste management in those areas where collection costs are lower, while still risking under-funding the areas that face the greatest challenges.

*We have only one PRO per packaging material and the municipalities do not collect on the behalf of producers (they make only supplementary collections). PROs can only be established by producers and only producers can be members, so all the decision power belongs to producers themselves. They call for tender and choose operators according to their own needs and as cost efficient as they can. There is no need for any specific calculations. They all are also non-profit organisations.*

Ministry of the Environment, Finland

*Due to competition we cannot charge more than the market will bear*

RENAS AS, Norway

*Competition between waste management companies leads to competitive prices based on a best-bidder principle... Competition between PROs prevents overshooting prices.*

Altstoff Recycling Austria AG (ARA)

*In our opinion, the most effective approach in providing producers with assurance that they are paying only the necessary costs is a fair competition between the PROs.*

Ecolamp, Slovakia

*There can be no better mechanism than good service level commitments, strictly enforced, and a competitive marketplace.*

Recolight, UK

*In the Netherlands, the municipalities have the operational responsibility of collection and contracting waste sorting companies or recyclers. They receive a turnover for each tonne of material that they supply the recycler with. If the weighted average turnover (for the entire country, calculated in the year after the book year) is lower than the average cost of collection, the difference will be paid out to the municipalities by the EPR system. This ensures that on average, all costs are paid. Only municipalities that have an ineffective collection system or low quality waste material do not receive the full cost, whereas the municipalities with a more efficient collection system or good quality (and material turnover) will receive a bonus.*

Afvalfonds Verpakkingen, Netherlands

It is important to note the combined emphasis on competition and standards. Producers have highlighted as evidence of competition's benefits the reduction in costs for WEEE



compliance in Austria when competition was introduced. However, the introduction of price competition also resulted in competition on standards, and concerns that this led to a diminution in them. It also appears that competition can go beyond the point where it achieves substantive benefit – the UK, for example, has more than 20 compliance schemes for WEEE, and it is unclear to what extent this multiplicity of schemes adds value, especially in the absence of clear minimum standards that PROs must meet.

We conclude that, especially if monopoly PROs are used, they must be transparent in their own costs (e.g. through publicly available audited financial statements) and demonstrate that the costs of the services that they commission are reasonable (e.g. by procuring those services through competitive tender, although other means may also be acceptable). They should also demonstrate that these costs are apportioned equitably across producers.

Systems that rely on supporting the value of recycled materials in order to fund collections can be effective in meeting relatively low targets, where there is perhaps some justification for focusing on “low hanging fruit” to keep costs to a minimum. However, where recycling targets increase, the system appears likely to become inefficient in allocating resources to third parties so as to meet only the necessary costs. The UK system has also resulted in significant year-to-year fluctuations in the level of price support, especially in relation to WEEE, when the performance of collectors has not been sufficient to meet the required targets – creating a lack of predictability for both producers and collectors that does not appear to be conducive to supporting longer-term investments in services and infrastructure.

In all cases, PROs should demonstrate that their funding system is capable of delivering services that are able to meet the targets set in directives, and to meet the requirements set out in the EU law. This can be demonstrated either through establishing minimum service standards in law (for example, in respect of collection services for packaging materials), adherence to audited standards where available, e.g. the WEEELABEX or Cenelec standards for WEEE management. This may require a process of inspection and enforcement by national authorities, which producers would reasonably be expected to fund.

#### **3.4.4 PROs Pay Third Parties but Set Conditions**

The cases in which Article 8a(4) is most relevant are where the collection and/or treatment of end-of-life obligated products is undertaken by a third party that is not appointed directly by the PRO (i.e. the role of producers is mainly one of funding activities undertaken by those over whom they have no direct control). Such schemes are relatively widespread, and can inform the development of guidance on Article 8a.

A common system is for PROs to make direct payments to municipalities. However, rather than simply pay the costs incurred by municipalities, they may seek to limit the payments to the necessary costs by applying a formula to determine the value of the payment, or they may require/expect that municipalities establish the cost-effectiveness of their service through open tendering.

*The collection of materials will, in accordance with existing collection structures of the public waste management authority, be undertaken by the company (private or public) which makes the economically most advantageous tender in an electronic call for tenders (competitive tender) and which is suitable for the task.*

Umwelt Bundesamt (UBA) – German Environment Agency

*Spanish local entities have... the responsibility of providing their citizens with municipal waste management... Ecoembes and each local entity in Spain are therefore required to sign a cooperation agreement that details the waste management services that should be financially covered by the producer.*

*In this light, Ecoembes has established an operational model including payments formulas, which is reflected in said agreements, and is underpinned by 'efficient' costs. This model aims at optimising the operations while pursuing a quality control system to ensure that industry payments cover efficiently-run services. The model entails establishing basic service conditions for all local entities. These conditions are at the same [time] matched with a series of objective specificities linked to the entities' territory and population that may impact the delivery of the services. An economic value is attributed to each of these elements.*

*Examples of collection systems include lateral, back and upper loading, buried containers, pneumatic recovery and bags. Examples of entities' specificities include their urban, semiurban and rural status; their floating population (seasonal, non-seasonal); the existence of small islands; population elements (dispersion index); urban elements (horizontality index); among others. Examples of technical and economic efficiency elements include collection from containers filled at least at 66% of their capacity, 90% efficiency average in the collection routes, among others.*

*Through this operational model, multiple combinations of services and entities' specificities are allowed, giving way to the most coherent service for separate collection and sorting of waste materials possible for each individual local entity. The resulting information is finally modelled and a cost is defined for both separate collection and sorting services.*

Ecoembes, Spain

*In our negotiations, we advocate in general for a "competitive price policy": even if there is no competition between municipalities, ARA is not prepared to pay more for the same service than private companies are offering.*

Altstoff Recycling Austria AG (ARA)

*[T]he collection is undertaken by municipalities on behalf of the producers, but all the system is paid by the PRO schemes, on behalf of the producers (packers in this case). The amount paid by the PRO scheme to the Urban Waste Management Systems/Municipal Systems, is fixed by law, and like mentioned before, this contribution was calculated using a model developed by an university that took into account several inputs that were necessary to calculate the cost of collection, sorting and transport, like, for example, the packaging material and the area of the country*

*(areas with higher or lower population density). It is important to also refer that all stakeholders were involved in the construction of this model, to guarantee a fair value.*

Portuguese Agency for the Environment

In such a scheme, a great deal clearly depends on the design of the tender process or the funding formula that determines the payments made to municipalities (or other collectors).

The challenge is to ensure that producers meet all the relevant costs, but that these are no higher than is necessary for the materials for which they are responsible, and that municipalities are remunerated in a way that reflects the costs that are necessary to incur in order to achieve an appropriately high level of recycling in their area, while not rewarding inefficient services.

- For funding formulae, various Member States including Spain and Portugal have developed systems for assessing the costs of packaging waste management that could be developed further by other Member States to meet the requirements of their own producer responsibility systems for this and other material streams.
- For tender processes, FostPlus in Belgium has continuous participation in the commissioning process, whether as part of the initial procurement process or as part of a regular process of cost review with municipalities. There is a standard method by which municipalities report their costs, which is subject to audit. This ensures that the system does not dictate whether municipalities should outsource services, but allows for consistent comparison of costs and provides assurance to producers that costs do not exceed the necessary level.

Whichever of these systems might be used, it will be necessary to ensure that the costs associated with the waste streams for which producers are responsible are separable so that the costs can be disaggregated from the costs of managing the wider waste stream.

Several EPR schemes already make some form of adjustment in seeking to attribute ‘the packaging-related share’ of the costs of collecting paper and cardboard together (for example, in Cyprus, there is a deduction in the cost associated with the collection of non-packaging paper).

An additional important consideration is the proper scope of the responsibilities of municipalities – should they, for example, be responsible for the management of the sale of recyclable material. Where municipalities (or any bodies other than those controlled by producers) have this responsibility, there is a risk that producers may take the view that the sale price achieved is not optimal. One way to overcome this issue is to ensure that under all schemes, producers themselves, or those acting on their behalf, are responsible for marketing the secondary materials. In practice, this might not always be happening, in which case, some assurance might be sought from producers that materials are not being sold at prices below what the market can support: if nothing else, those selling materials should have an incentive to fetch the best price, consistent with developing positive relationships with end users.

## 3.5 Recommended Approach to Distribution of Funds

### 3.5.1 Overview

This section examines the approach Member States may wish to take regarding the implementation of systems to determine how funds gathered under producer responsibility schemes should be distributed to waste management organisations. Current producer responsibility schemes do not always distribute funds to collectors in a way that closely reflects the costs that they individually incur – particularly where funding is allocated by effectively adding a supplement to the price of recycled materials (e.g. by adding €15 to the value of each tonne of relevant material that is sent for reprocessing).

Systems that do not allocate payments directly in line with the costs incurred by individual actors appear to be permissible under Article 8a(4). The language of Article 8a in general is concerned more with establishing the total costs that must be borne by producers, which must reflect the total necessary costs of managing waste so as to meet the targets. Nowhere does it specify that payments must be made in such a way as to directly match the costs incurred by individual entities engaged in waste management. Indeed, the concept of “necessary costs” implies that some costs that may be incurred by entities undertaking waste management activities may be deemed “unnecessary” and therefore not to be funded by producers.

However, a system in which the payments received by those undertaking waste management activities are not closely aligned to the costs these entities incur is unlikely to be ideal as a means of supporting the delivery of adequate services, or as a way of ensuring that producers’ funds are spent in the most effective way to support Member States’ efforts to meet the targets.

Given the likely need in most Member States to increase expenditure on waste management in order to meet the waste management targets and achieve the separate collection requirements, it will be important that producer responsibility funds are allocated in a targeted way, while avoiding unnecessary complexity (and the attendant inefficiency this might bring). Inaccurate allocation is likely to lead to over- and under-funding of some services and could therefore lead to either amounts in excess of the necessary cost being funded, or to targets being missed due to the under-funding of services necessary to achieve the required performance.

It is unlikely, for example, that a system that allocates resources based on the tonnage of a particular material that is collected for recycling will achieve the required outcomes as the costs involved in achieving a particular level of recycling performance may well vary across the Member State. Such a system would be likely to over-allocate resources to areas of the Member State where the costs of collection (for example) are relatively low, or where members of the public adopt waste prevention and recycling behaviours with relatively low levels of expenditure on communications.

Member States should ensure that the method of allocating resources has regard to the actual service model operated by those engaged in undertaking waste management

activities. However, it may be problematic to rely on the actual costs incurred by these entities as:

- Collecting actual data on expenditures may be relatively costly and time-consuming, especially if it has to be done on an annual basis; and
- Actual costs may need to be adjusted to reflect any issues around inefficiency, or allocation of overheads between activities whose costs producers are responsible for bearing and other activities that fall outside the scope of producer responsibility.

One approach that Member States may wish to consider is to model the cost of the waste management activities that need to be carried out to handle the waste for which producers are responsible, using an evidence-based approach to allocate a reasonable proportion of any shared costs. Such modelling may in any case be necessary in order to establish the total costs to be covered by producers (see Section 2.0).

Such a model would need to take account of relevant differences between the costs incurred by those engaged in waste management activities in different parts of the Member State:

- For waste collection activities, examples of factors that would need to be taken into account would include:
  - The collection method employed, which should be reasonable given the nature of the properties from which waste is to be collected;
  - The expected number and type of vehicles and staff required to undertake the collections, which would need to reflect the expected efficiency of collections, given the geography and housing type in the area covered;
  - Fuel costs, which may vary across the Member State;
  - The cost of the containers necessary to deliver the collection system;
  - Differences in local costs, especially for land (which affects depot costs) and labour; and
  - Any income from the sale of recyclable material that is retained by the collector.
- For transfer, sorting and treatment facilities:
  - Differences in the costs of land in different areas;
  - Differences in the costs of acquiring or maintaining equipment;
  - Differences in disposal costs; and
  - Differences in labour costs; and
  - Any income from the sale of recyclable material that is retained by the operator.

Member States may wish to develop standard models and assumptions suitable for the waste management systems that are commonly used within their territory. Alternatively, there are examples of models that have already been developed which could be procured and adapted for the purpose, including, (in the UK) WRAP's KAT model and (in Spain) the cost model developed by producer responsibility organisation ECOEMBES.

The factors that may influence the level of payments that are discussed further in the succeeding sections.

## 3.5.2 Factors

### 3.5.2.1 System Design

The design of a waste management system is a critical determinant of its cost. The design of the system in any particular case should be suitable to perform at a level that will deliver a level of recovery that:

- meets the specific waste stream recovery targets set out in the Directives; and
- contributes sufficiently to meeting the wider waste management targets, in line with the expectations of the Member State regarding how the overall targets will be met.

It must also comply with the Waste Framework Directive's requirements regarding the separate collection of materials for recycling.

It may also be reasonable for a Member State to require producers to fund services that are thought to be capable of exceeding the targets, rather than just to barely meet them, in order to minimise the risk that the targets are not in the end achieved and to contribute as necessary to meeting wider Union targets, such as those in respect of municipal waste recycling.

### 3.5.2.2 Geographical Differences

A Member State (preferably, in discussion with producers and waste management organisations) may take the view that it is reasonable to expect some regions to achieve higher recycling rates than others (e.g. due to differences in demographics or housing stock). However, Member States should bear in mind the requirement of Article 8a(3)(a) that producers should not limit the geographical scope of their responsibility to areas "where the collection and management of waste are the most profitable".

Producers should be required to contribute resources on the basis that they will provide for *adequate* collection systems in each area of the Member State. Aside from the derogations allowed under Article 10 of the WFD, the requirements for separate collection apply to the whole of each Member State; and the wider targets will generally require high performance to be achieved across the Member State. Although it is acknowledged that performance will vary between areas, it should be the expectation that an adequate service is provided across each Member State, rather than, for example, only where this is cheapest to provide.

The design of the collection system should take account of local circumstances, and be reasonably convenient for citizens to use. Collection systems should be *acceptable* in terms of societal and industry norms in the Member State, not just to producers.

Making collection systems *adequate* and *acceptable* may necessitate greater costs being incurred to provide services in some locations than in others. For example, where it is impractical for households to store multiple, large containers at home, it may be

necessary to collect material more frequently. Where citizens are difficult to engage in recycling due to particularly diverse or transient populations, there may be a need for more expenditure on communication, perhaps even including door-to-door visits to advise citizens regarding how to use the collection system correctly. These additional costs should be reflected in the approach to the distribution of funds, so as to ensure that services in all parts of the Member State are adequately funded.

Where additional costs have to be incurred in order to meet the local share of targets, these costs should be recognised to be necessary in order to achieve the targets. Service design should be reviewed periodically, especially where the expected level of performance is not being achieved. Such a review may result in a decision that the service model needs to be revised, or that additional training, support or communications are required in order to enable the targets to be met. The costs of such additional effort should be considered 'necessary costs'.

### 3.5.2.3 Consistency

Several Member States have introduced a mandatory or voluntary minimum level of collection service that citizens can expect, or have specified a preferred design for collection systems. Member States may wish to consider whether, in their case, standardisation of this type would help to:

- avoid each individual municipality having to individually research, assess and decide upon the design of its services;
- ensure that residents of all municipalities receive an adequate level of service;
- avoid disagreements with producers over the design of the service appropriate to a particular municipality;
- avoid disagreements over the correct balance between source separation and subsequent sorting, thereby helping to simplify and standardise infrastructure needs; and
- facilitate communication regarding recycling at a national (or even European) level.

Adoption of a preferred service model may be a reasonable requirement, and the costs of delivering that service model may be considered 'necessary', even where it may not be the cheapest possible way to achieve the required targets within a particular municipality.

Member States may also wish to issue research-based guidance on the collection systems that are likely to be most effective, having regard to the different circumstances that may apply in different geographical areas. The analysis behind this guidance may also inform the design of the modelling that helps to determine the appropriate financial contributions and allocations of funds between waste management organisations.

## 3.6 Recommendations in Respect of Efficient Service Delivery

One of the most complex issues to determine in respect of ‘necessary costs’ is likely to be whether or not a particular service is adequately *efficient* – or put another way, whether the actual costs of a waste management service that is being delivered exceed the resource costs that are strictly necessary to deliver the specified service. This section relates principally to the process of ongoing efficiency review and data monitoring, which in turn informs the overall scale of costs that producers may need to meet in subsequent time periods.

The question of efficiency can arise with respect to operational aspects of the system, supporting services and overhead costs – and with respect to the activities of PROs.

Efficiency is an important consideration, both in establishing the overall amount that producers must pay into the system, and in deciding how much each collector should receive. Producers should only be required to meet the costs of a system that is reasonably efficient; waste management organisations should expect only to receive payments that meet their costs in full if they run efficient services.

However, where demonstrating efficiency creates additional costs for PROs or the parties undertaking waste management operations, these costs might reasonably be considered to be part of the costs that are “necessary to provide waste management services in a cost-efficient way”, and therefore within scope of EPR. Activities undertaken to establish and improve efficiency are part of the necessary costs of delivering an effective waste management system. It is therefore reasonable for Member States to expect producers to support collectors and sorters to increase their efficiency. However, different Member States may wish to set their own priorities and processes to reflect their specific circumstances, and variation in roles and responsibilities for their systems.

It is perhaps useful to distinguish between two forms of efficiency:

- **Systematic efficiency:** Is a waste management system one whose design is, in general, capable of delivering the services necessary to achieve the required level of performance at a reasonable cost?
- **Local efficiency:** Has the system operated in a particular location been implemented in a way that avoids costs that exceed what is necessary in order to provide waste management services in a cost-efficient way?

These are discussed further below.

### 3.6.1 Systematic Efficiency

Member States should seek to ensure that the waste management system (or systems) that are adopted within its territory are suitable to deliver the necessary level of performance to meet the targets at a cost that is reasonable.



### 3.6.1.1 Service Models

One approach to demonstrating systematic efficiency would be to undertake national or regional level analysis to establish the most efficient collection model. Such work may establish that some areas (e.g. dense urban areas, very rural areas) may have different requirements from others, and it will then be a matter for Member States to determine whether, on balance, it is better to implement uniform services or to allow variations that help to improve cost effectiveness.

For example, following the Welsh Government's introduction of a national waste plan with a 70% recycling target for household waste, it decided to assist municipalities by assessing which collection system was likely to enable compliance with the target to be achieved in such a way as to optimise cost and environmental impact/benefit, including quality of recycling. As part of that process, a detailed options appraisal, and associated modelling, was undertaken to support the development of a 'collections blueprint' for Wales, which recommended the use of highly source separated, door-to-door collections. The effectiveness of the 'blueprint' has recently been positively reviewed.<sup>7</sup>

### 3.6.1.2 Local Government Structure

In some cases, especially where a Member State has a large number of municipalities with local responsibility for designing and operating waste collection services, it may be argued that there is an inherent inefficiency built into the system. Where many municipalities have a small population, this limits opportunities for economies of scale and could create challenges for co-ordination.

Where such issues arise, Member States may wish to consider whether there is scope to encourage greater co-ordination between municipalities in order to make decisions about waste management at a more appropriate level, and to reduce costs for producers. There are numerous examples of partnerships between small municipalities to help improve services for citizens, to facilitate investment and allow for pooling of expertise, without the need for any formal change in administrative structures.

In general, making use of established municipal waste collection systems and infrastructure will typically be a relatively cost-effective option for producers; however, where the structure of municipalities obviates this advantage, it is open to producers to explore whether lower costs would be incurred if producers were to establish their own waste management structures, separately from the municipal system.

### 3.6.1.3 Competing Collectors

As discussed in section 2.6.4, many Member States have competitive markets for collections of municipal waste, especially from commercial and industrial sources.

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<sup>7</sup> Eunomia Research & Consulting (2016) *Review of the Welsh Government Collections Blueprint*, Report for Welsh Government, March 2016, <http://gov.wales/docs/desh/publications/160322-review-of-welsh-government-collections-blueprint-technical-report-en.pdf>

Because such systems rely on price competition, they may be difficult to maintain in their current form in a model where producers meet (the majority of) the costs of waste management.

To minimise disruption, Member States may consider it desirable to maintain the current system of multiple collectors, but have producers meet the costs. However, it is unlikely that the overall provision of collection services in this arrangement (which involves several waste collectors operating fleets of vehicles in parallel with one another, each collecting only a small proportion of the bins) is as efficient in logistical terms as one where a single entity undertakes the collection of all such waste (potentially alongside the collection of household waste).

It is thus questionable whether such a system can be said to be systematically efficient, and it could therefore lead to producers bearing costs that exceed “the costs that are necessary to provide waste management services in a cost-efficient way”. Member States should therefore consider adopting one of the alternative models for waste collection mentioned in section 2.6.4, such as entrusting collections to municipalities or procuring an exclusive contractor to undertake collections in a particular geographical zone.

#### **3.6.1.4 Treatment and Infrastructure**

Many types of waste infrastructure will have an optimum range of scale at which it is most efficient. This scale can be difficult to achieve when the quantity of waste controlled by any one entity (whether a municipality, a private company or a PRO) is too small. This can deter necessary investments that would, if made, improve recycling performance and/or reduce costs.

When designing their approach to EPR, Member States should consider how decisions regarding the procurement of new infrastructure will be made, and where responsibility for such decisions will lie – although ultimately the necessary costs will be borne by producers. Such decisions could be made at a national or regional level, in response to a waste management plan. If left to producers and PROs to decide, the design of the EPR scheme will need to provide for sufficient scale and/or co-ordination to enable long-term investments to be made.

#### **3.6.1.5 Governance and transparency**

A possible way to ensure that costs do not exceed necessary levels – whether for a monopoly PRO or within a competitive system – is to put in place governance arrangements that give producers assurance. This may involve:

- Clear reporting requirements on costs incurred and outcomes achieved;
- Board representation for producers;
- Alignment between the PRO’s interests and those of producers;
- Clear constitutional documents and terms of reference; and
- External, independent audits of activity and outcomes.

## 3.6.2 Local Efficiency

There are a number of ways in which local efficiency could be established within a particular Member State. Member States should consider all reasonable means of establishing local efficiency; and it is not the intention of the Directives to require any particular method of establishing local efficiency to be adopted. Different methods of demonstrating local efficiency may be appropriate to different parts of the waste management system in a Member State – for example, collection services might be benchmarked, while sorting services are competitively tendered.

### 3.6.2.1 Competition

Competition is one method of establishing that local services are being run at the lowest achievable cost. However, there is no obligation on Member States to – for example – consider putting publicly run waste collection services out to competitive tender. Where Member States have decided that such decisions should be a matter for municipalities, the Directive does not give rise to any obligation to change. Nor do the Directives require that there should be competition between PROs, if Member States can find alternative means to demonstrate that a monopoly PRO is a more cost-efficient arrangement, both at the point at which the Member State’s producer responsibility is established, and on an ongoing basis.

Subjecting collection and treatment services to regular competitive tenders would be a way for Member States to provide producers with assurance that the costs are reasonable. However, competition needs to be carried out in ways that enable the necessary investments to be made. Where services are tendered that necessitate capital investments, contracts should be of sufficient length to allow those investments to be recovered efficiently, as otherwise the consequence can be either inadequate investment, or excessive cost being incurred due to assets being amortised unnecessarily quickly.

As discussed in section 3.6.1.3, competition between different waste collectors operating within a single geographical area brings inherent inefficiencies. In markets where such competition has hitherto been the norm, the benefits of competition can be achieved by arranging competitive tenders, looking at both price and quality of service, for all collections in a particular geography. In order to allow opportunities for SMEs to compete, and to ensure the continuing potential for competition in second and subsequent tender processes, Member States should consider designing any such tenders with a mixture of small and large geographies, and/or setting a maximum market share that any one contractor may hold. Tenders should also take account of issues such as the number of collection locations necessary to allow for efficient service delivery and the accessibility of infrastructure such as depots, transfer stations and treatment facilities.

Where competition is employed, in order to maximise the confidence that tendering would engender, Member States may wish to provide public authorities with guidelines on successfully procuring waste management services, including with respect to performance and efficiency mechanisms that can be included within contracts and

procurement processes. Alternatively, guidance might be provided on how to allow the relevant PRO(s) to play a role in overseeing the tendering process.

Competition need not be limited to collection, treatment and material sales, but can also take place between PROs. However, the administrative costs of PROs represent a relatively small share of the overall system costs. Consequently, provided that the commissioning of the operational services (collection, sorting etc.) is carried out in a way that ensures efficiency, competition between PROs should have a relatively limited scope *in itself* to affect producers' fees. Competition is therefore likely to have the most beneficial effect where it is employed in the commissioning of operational services.

However, where competition between PROs is used, care is necessary to ensure that it does not effectively incentivise PROs to under-fund waste management or undermine the implementation of fee modulation. As explained in Section 5.11, where there are competing PROs, it is important that at a Member State level the magnitude of fee modulation for a given product or packaging format is set centrally in absolute terms. This will ensure a consistent incentive for change across competing PROs, and will mean that the different schemes can still compete on the base of fee price and levels of service.

Where there is competition between PROs, there will need to be sufficient transparency to enable producers to determine that the scheme they join will enable them to discharge their responsibilities, and to enable Member States to monitor their performance.

This could be achieved through:

- 1) The market for compliance being regulated in such a way that the fee structures of competing schemes are transparent, allowing producers to make informed decisions regarding switching; and
- 2) Clear auditing of reported levels of compliance, with the reporting of recycling required to take place at the point where material enters the recycling operation (with mechanisms in place to ensure that where materials are exported for recycling, the same level of reporting is required, or the reporting does not favour exports);

Another important consideration is the risk that competition results in PROs that are not sufficiently large, or that lack the necessary financial security, to make capital investments to improve performance. A PRO that invests in, for example, a new plastics sorting facility may incur costs that force it to raise its fees, resulting in a loss of market share. Member States should consider how infrastructure investments will be funded, and any need for co-ordination between competing PROs within such a model. This might include some combination of a limitation on the number of competing PROs, centralised co-ordination of infrastructure investment between PROs or the operation of a strategic fund into which all PROs contribute.

### 3.6.2.2 Benchmarking

In some circumstances, as a matter of policy or practicality, the test of competition may not be available or desirable. The key alternative (or supplement) to procurement is to benchmark the cost of the service for a given waste management activity, to ensure that the local costs are not significantly in excess of expectations. Member States could consider a number of approaches to benchmarking. Much of the necessary information is likely to have been gathered in the course of the development of the type of service model discussed in Section 3.5.1:

- Costs could be compared against those of other similar entities, on a per household, per capita or per tonne collected basis, taking into account factors likely to lead to variation in costs, such as the type of service or the area's rurality. If the costs were, for example, outside an acceptable variance or in the upper quartile of the comparison services, the activity may be subject to a more detailed process to demonstrate why the costs were above the norm – or expect not to receive the full costs.
- It may not be necessary to seek to achieve a precise evaluation of the costs, but to ensure the costs are not outside the normal range, once any specific local considerations (e.g. local wage costs, capital costs, local geography, housing stock and waste composition) are taken into account.
- Member States could implement standards with the goal of normalising levels of productivity, giving producers assurance that, so long as the service was meeting a standard or a due process had been carried out by the municipality, the 'necessary costs' test had been met.

Benchmarking relies on the availability of data. There would need to be some level of transparency of accounting for service costs required at the national level to ensure the information were available to make the comparisons. This could be in the form of a national indicator on waste collection service costs, or a nationally approved system for financial reporting.

### 3.6.2.3 Efficiency Reviews

A further method by which Member States could contribute to local efficiency would be to require public authorities to undertake regular efficiency reviews. These can range from more strategic reviews, focusing on benchmarking and analysis of productivity against performance indicators, to more in-depth approaches such as the use of process engineering techniques (e.g. work-time studies).

Member States could define a consistent method by which public authorities should collect data on the costs and performance of their waste management services. With such data, it may be possible to develop productivity indicators or metrics to aid producers in identifying services that are inefficient and so deliver above 'necessary costs'. Examples might include:

- The number of collections carried out per hour;
- The tonnage of material collected or processed per hour; and

- The cost to collect and/or process an average range of recyclables.

However, such metrics may be challenging to develop, and potentially shade into a benchmarking approach.

The Welsh Government has supported municipalities to apply a business planning toolkit to analyse their likely collection performance and costs under a variety of scenarios. The business planning process included a strategic self-assessment and efficiency review to establish opportunities for improvement. It included an options appraisal and cost-benefit analysis to examine the environmental and economic benefits resulting from various collection models, and resulted in the development of a business plan. This process was designed to ensure that each authority adopted a waste management system that was likely to be *adequate* – and to deliver *systematic efficiency*. It also assisted in improving *local efficiency*.

#### 3.6.2.4 Output Monitoring

One aspect of efficiency is that the system produces the expected recycling outputs from the expenditures incurred. All waste management activities that are funded through EPR should produce output data on performance that can be monitored by Member States and producers.

EPR schemes may wish to include financial incentives to encourage high performance, but such incentives should be designed so as to recognise relevant differences in circumstances that may affect performance. Performance incentives should be an additional cost to producers, rather than being funded through (in effect) a transfer of resources from less well performing organisations to better performing ones.

#### 3.6.3 Transparency and Engagement

Because producers are responsible for ensuring that the targets are met, and for funding services necessary to achieve this goal, they have a reasonable expectation that public authorities that receive funding will provide transparency regarding their costs and performance. This is an important part of developing a partnership between producers and municipalities. The nature of the transparency required may evolve over time, but Member States should ensure that public authorities are expected to:

- Involve producers (or their representatives) in the design of services (especially where service design has not been specified at a national level);
- Involve producers (or their representatives) in the design of service procurements;
- Support benchmarking and provide assurance regarding value for money by submitting data – perhaps annually – regarding the costs and performance of their service either to PROs or to national government. Member States should develop a consistent format for such reporting so as to facilitate comparisons; and
- Co-operate with necessary surveys and other studies that PROs may find it necessary to commission.

Where Producer Responsibility Organisations are used, they also need to offer a high level of transparency, both to their funders and other stakeholders, regarding the costs they incur and how the funding they received is utilised. PROs should prepare annual, independently audited financial statements and might usefully be made subject to environmental information rules to ensure that they are as open as possible.

## 4.0 Existing Practice in Fee Modulation across the EU

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Article 8a(4) of Directive 2008/98/EC states that:

*Member States shall take the necessary measures to ensure that the financial contributions paid by the producer of the product to comply with its extended producer obligations:*

*(b) in the case of collective fulfilment of extended producer responsibility obligations, are modulated, where possible, for individual products, or groups of products, notably by taking into account their durability, reparability, re-usability and recyclability and the presence of hazardous substances, thereby taking a life-cycle approach and aligned with the requirements set by relevant Union law, and where available, based on harmonised criteria in order to ensure a smooth functioning of the internal market;*

Fee modulation within EPR schemes has long been recognised as having the potential to incentivise improvements in respect of the design of products and packaging in order to deliver environmental benefits. However, uptake remains relatively limited.

In the following sections an overview of the different types of approaches to fee modulation – either in operation or planned - across a number of Member States is provided, before moving on to considerations in respect of principles for fee modulation (Section 5.0) and criteria for fee modulation for packaging (Section 6.0), electrical and electronic equipment (Section 7.0) and batteries (Section 8.0).

### 4.1 Packaging

26 EU Member States have EPR schemes for packaging waste. As shown in Table 4-1, all schemes have some form of basic fee modulation i.e. charging different fees on a per kg basis for each main type of packaging material placed on the market (paper / card, glass, metals, plastic).

In 20 Member States, there is some form of greater granularity in the fee structure, where there are specific fee categories for certain types of packaging (i.e. fees are not just set on the broad material type). In six countries, a more ‘advanced’ form of modulation is in evidence, comprising 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’.

**Table 4-1: Overview of Packaging Fee Modulation in the EU**

	'Basic' modulation - i.e. different fees per material type	Greater granularity in fee structure - e.g. specific fees for certain types of packaging e.g. PET/HDPE, beverage cartons etc.	'Advanced' modulation (e.g. penalty fees, or numerous different fee levels within material type)
Austria	Y	Y	
Belgium	Y	Y	
Bulgaria	Y	Y	
Croatia	Y	Y	
Cyprus	Y	Y	
Czech Republic	Y	Y	
Estonia	Y		
Denmark	-	-	-
Finland	Y	Y	
France	Y	Y	Y
Germany	Y	Y	
Greece	Y	Y	
Hungary	-	-	-
Ireland	Y	Y	
Italy	Y	Y	Y
Latvia	Y		
Lithuania	Y	Y	
Luxembourg	Y	Y	
Malta	Y		
Netherlands	Y	Y	Y
Poland	Y		
Portugal	Y		Y
Romania	Y	Y	
Slovakia	Y	Y	
Slovenia	Y	Y	
Spain	Y	Y	
Sweden	Y	Y	Y
UK	Y		

An example of a greater level of 'granularity' in the fee structure within a material type is found in **Spain**, as shown in Table 4-2.<sup>8</sup>

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<sup>8</sup> Ecoembes (2019) Green Dot Fees, available at <https://www.ecoembes.com/en/companies/member-companies/green-dot-fees>



**Table 4-2: Plastic Packaging Fee Categories in Spain**

Category	2019 (€/kg)	2020 (€/kg)
PET	0.377	0.4331
HDPE (rigid body and UNE bag)	0.377	0.377
Flexible HDPE, LDPE, Compostable and other plastics	0.472	0.739

Source: EcoEmbes

**Italy, Sweden and the Netherlands** have taken a broader approach. In Italy, plastic packaging has four different categories, as follows:

- **Level A** sortable and recyclable packaging from the commerce and industry circuit: €150.00/t (€0.150/kg);
- **Level B1** sortable and recyclable packaging from the household circuit- Packaging with an effective and consolidated sorting and recycling chain: €208.00/t (€0.208/kg);
- **Level B2** sortable and recyclable packaging from the household circuit- Other sortable and recyclable packaging: €263.00/t (0.263/kg); and
- **Level C** (packaging not sortable/recyclable with current technologies): €369.00/t (€0.369/kg).

In deciding which packaging formats should be in each category, account is taken of the characteristics of the different formats, and the extent to which they might cause disruption in the sorting and recycling process. For example, clear PET bottles, without certain disruptive features are in Level B1, while Opaque PET bottles are in Level C.

A more detailed review of the approach taken by CONAI in Italy can be found in Appendix A.1.0.

In **Sweden**, for household and service packaging, as of April 2019, the fee is differentiated into two levels – a lower fee and a higher fee.<sup>9</sup> The lower fee is SEK 3.15/kg (€0.290/kg) for household packaging, and SEK 2.8484SEK/kg (€0.261/kg) for service packaging. The higher fee is SEK 3.90/kg (€0.360/kg) for household packaging,

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<sup>9</sup> Förpacknings- och Tidningsinsamlingen AB (FTI) (2019) Packaging Materials and Reporting Categories, available at <https://www.ftiab.se/download/18.3290e776169a201ce416ac/1557997776406/Packaging%20materials%20and%20reporting%20categories%202019.pdf>

and SEK 3.5151SEK/kg (€0.323/kg) for service packaging.<sup>10</sup> The fee category within which packaging formats will be placed depends upon 'the material, its sorting and processing properties and 'saleability' after sorting and processing'. To be eligible for the lower fee the plastic must be:

- PE (LDPE, LLDPE, HDPE, MDPE...) Example: Hard packaging -
- PE (LDPE, LLDPE, HDPE, MDPE...) Example: Soft packaging, such as film or bags -
- PP Example: Hard packaging, no film or bags (e.g. OPP or BOPP) -
- Colourless transparent PET (ex rPET, APET, CPET) example: Bottles and cans (blow moulded packaging)

In addition, the packaging can't:

- be coloured black;
- consist of multi-layered material (laminates);
- have more than max 60% printed surface print (in- or outside); or
- have a sleeve made of another type of material than the packaging.

In the **Netherlands**, the regular fee for plastics is €0.640/kg. However, as of 2019, there is a reduced fee, of €0.380/kg, for certain plastic packaging.<sup>11</sup> The reduced fee is available for some rigid plastic packaging items (not trays) made from PE, PP, or PET that adhere to specific requirements to ensure any 'disruptors' are avoided.

**Portugal** has taken a more limited, but targeted, approach based on applying penalties. 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:<sup>12</sup>

- PET bottles with metal caps;
- Glass bottles with non-removable ceramic and steel stopper; and
- PET bottles with PVC labels.

What is evident here is that the scheme is seeking to drive out disruptors in formats that could otherwise typically be expected to be recycled at high rates. However, it's worth also noting that with a single fee level for all plastics, PET bottles that do not incur a penalty will still be paying the same level of fee on a weight basis as formats that are less readily recycled (e.g. flexible packaging, or black trays).

In **France**, on a material specific basis there is a flat fee. An adjustment is then made based on the composition of the Consumer Sales Unit (CSU), which can be made up of a

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<sup>10</sup> Förpacknings- och Tidningsinsamlingen AB (FTI) (2019) Fees 2019, available at <https://www.ftiab.se/2641.html>

<sup>11</sup> Afvalfonds Verpakkingen (2019) Packaging Waste Management Contribution, available at <https://afvalfondsverpakkingen.nl/en/packaging-waste-management-contribution>

<sup>12</sup> Sociedade Ponto Verde (2019) Packaging that disrupts the recycling process, available at [https://www.pontoverde.pt/aderentes\\_uk/Tabela%20de%20penaliza%C3%A7%C3%B5es%202019%20EN.PDF](https://www.pontoverde.pt/aderentes_uk/Tabela%20de%20penaliza%C3%A7%C3%B5es%202019%20EN.PDF)

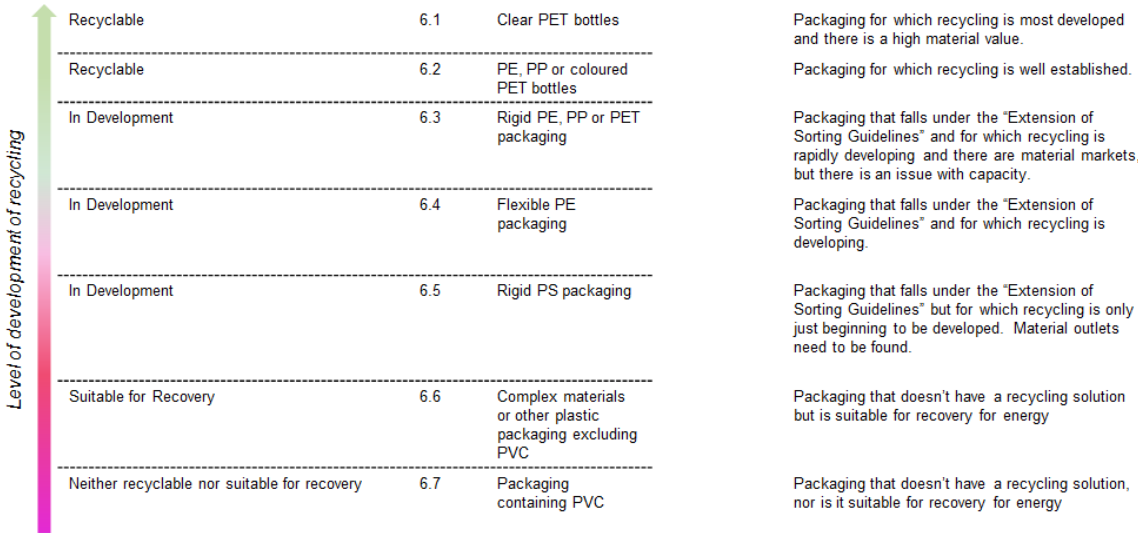
number of packaging units. Modulation – in the form of a series of bonuses and penalties – is then selectively applied. For example, a bonus of 12% on the total fee contribution is granted for bottles and vials made from PET, HDPE, or PP, as this type of plastic packaging meets French national sorting guidelines, and has a recycling channel. It’s worth noting, however, that such modulation on top of a basic €0.3463/kg fee for plastics (with no distinction by the type of plastic) does not reflect the differing value of the resulting secondary materials, nor the effect on secondary material value of differing colours of PET, HDPE or PP.

A 50% bonus is also applied to contributions by weight for polyethylene where there is at least 50% recycled material. Penalties are typically applied for disruptive packaging components.

At the end of May 2019, Citeo published its proposals for the eco-modulation tariff to apply in 2020.<sup>13</sup> Within this document, Citeo acknowledges that having a single level of basic fee for all plastic packaging is not necessarily appropriate. It is noted that the broad category of plastics covers a range of different resins and packaging types, which exhibit differing levels of maturity in terms of recycling, but that a single level fee for plastics does not give a price signal to encourage the use of plastics with more developed recycling channels. Accordingly, Citeo proposes to apply a ‘variable pricing’ on the plastic fee to reflect this diversity.

Figure 4-1 shows Citeo’s view of the maturity of recycling for different types of plastic resins and formats.

**Figure 4-1: Relative Development of Recycling by Plastic Resin and Format**

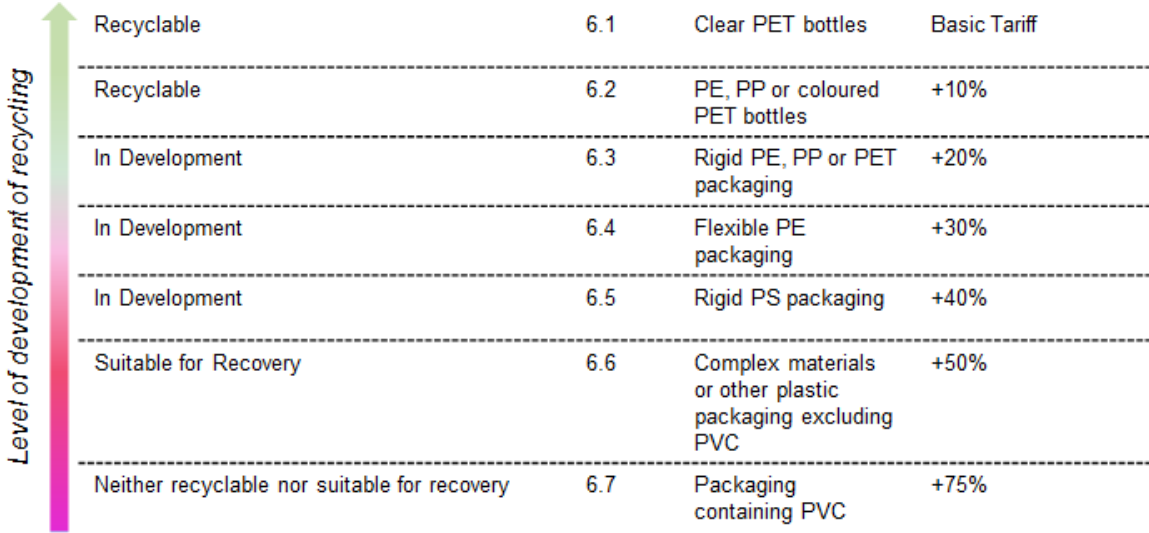


Source: Citeo

<sup>13</sup> Citeo & Adelphé (2019) Proposition de Citeo et Adelphé pour l’ecomodulation du tarif 2020, 29 May 2019

Citeo proposes to apply an uplift to the basic weight-based fee in line with the development of recycling as shown in Figure 4-2. The levels of the uplift will be reviewed in future in line with any improvements in the extent to which such packaging types can be recycled.

**Figure 4-2: Proposed Uplift to Basic Tariff**



Source: Citeo

It’s interesting to note that while recognising the limitations of the flat-rate fee for all plastic packaging, the way in which Citeo has sought to address it would still not necessarily reflect the net costs for managing the specific packaging type (accounting for material values). The material values will likely fluctuate over time, but as the uplift is based on a fixed percentage increase beyond the base fee, any change in material revenues will not be reflected in the modulated fee.

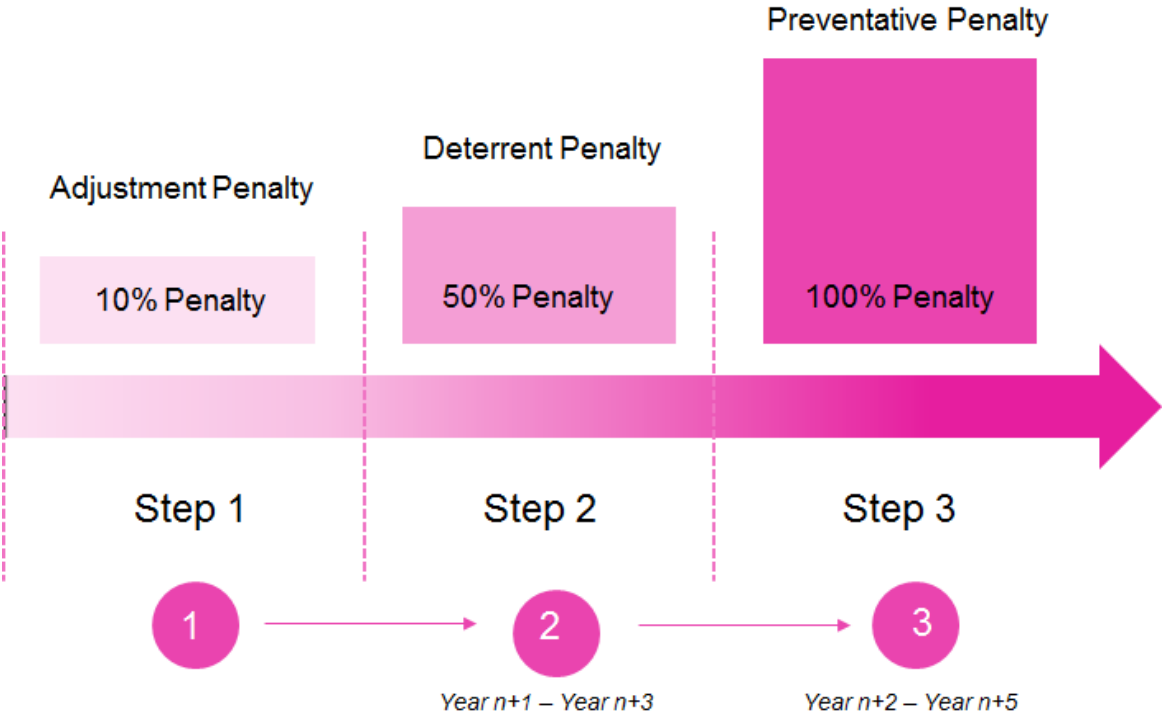
Nor would the modulated fee necessarily reflect accurately the relative contribution of the different packaging types to meeting the overall recycling rate.

Another significant change proposed is to establish the principle of a continuous, and increasing, penalty.<sup>14</sup> The rationale for doing so would be to give a more fulsome incentive for change, not only through increasing the magnitude of the penalty, but by giving those placing packaging on the market a clear signal as to the future direction of travel in respect of the penalty.

Any new criteria which means a penalty is incurred would see the penalty being set at 10% of the base fee in the first instance. The intention is that the penalty would be increased to 50% between 1 and 3 years after implementation, and to 100% between 2 and 5 years after implementation, as illustrated in Figure 4-3.

<sup>14</sup> Citeo & Adelphe (2019) Proposition de Citeo et Adelphe pour l’ecomodulation du tariff 2020, 29 May 2019

**Figure 4-3: A Continuous and Increasing Penalty**



Source: Citeo

The transition from one stage to the next would be proposed following consultation with the consultative committee for eco-design and eco-modulation, and would be subject to the agreement of the Ministry. In certain circumstances, where it is deemed to be merited, the penalty can be directly raised to 50% or even 100%.

In the case of plastic packaging, any such malus would be applied to the relevant uplifted fee (not the base fee) for the relevant type of packaging. For example, if a malus of 100% were applied to packaging with a fee that is already uplifted by 50% over the base fee (see Figure 4-2) the resulting fee to be paid would be three times the base fee.

A more detailed review of the approach taken by Citeo can be found in Appendix A.2.0.

In **Germany**, which has a system involving competing PROs, until recently, there has been no requirement to modulate fees. However, circumstances have changed with the new German Packaging Act (VerpackG). Section 21 of the Act requires that:<sup>15</sup>

- (1) When calculating participation fees, EPR-Organisations shall be obliged to create incentives for packaging manufacturers in order to:

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<sup>15</sup> Translation from a presentation from Matthias Klein of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2019) Reducing Fees through Better Recyclability: Modulated Fees in the New German Packaging Act, 2 April 2019

1. Promote the use of materials and combinations thereof which can be recycled at the highest possible percentage rate, taking into account the practice of sorting and recycling; and
2. Promote the use of recyclates and of renewable raw materials

In order to provide the PROs with a uniform framework for the assessment of recyclability, the Central Packaging Register (Stiftung Zentrale Stelle Verpackungsregister) is required to work with the Federal Environment Agency to produce annual minimum standards.<sup>16</sup>

The Central Packaging Register and the Federal Environment Agency published a guidance document in November 2018 to inform PROs as to the likely form such a standard would take. Relevant stakeholders were involved in initial discussions as part of a group of experts, following which draft guidance was prepared. This was subject to a further round of consultation, before being finalised.

The basis for the recyclability assessment is the unfilled packaging as a whole. Separate consideration of each component is not permitted. The guidance notes that the following should be taken into account when determining recyclability:

- 1) The presence of sorting and recovery infrastructure on the national market;
- 2) Sortability and separability of the packaging and its components (if necessary proven by empirical examinations); and
- 3) No incompatibilities of packaging components or substances that can hinder recycling (e.g. coatings, insoluble adhesives etc.).

The guidance states that the outcome would be the identification of the proportion of the packaging available for recycling. This might be defined on a metric or ordinal scale, and, as suggested by the guidance, could vary in detail from 0% to 100%, or in line with the following broad categories:

- No recyclable part;
- Slightly recyclable;
- Moderately recyclable;
- Highly recyclable.

Accordingly, the focus of the guidance is on the likely ultimate level of recycling rate that will be achieved by the packaging format.

A more detailed review of the proposed approach in Germany can be found in Appendix A.3.0.

There is limited emphasis on reusable packaging through fee structures. In **Estonia** it is noted that reusable packaging does not have to be declared as long as it is being

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<sup>16</sup> Translation from Stiftung Zentrale Stelle Verpackungsregister (2018) Orientierungshilfe zur Bemessung der Recyclingfähigkeit von systembeteiligungspflichtigen Verpackungen, 30.11.2018

reused.<sup>17</sup> Most other PROs make no reference to reusable packaging in their fee structure. The Belgian EPR scheme for industrial packaging, Valipac, charges a zero fee for reusable packaging as a form of incentive for reuse. However, Valipac's role is the provision of evidence of industrial packaging placed on the market and recycled.<sup>18</sup> Accordingly, it is not responsible for the end-of-life costs.

Recycled content also receives limited attention. In **France**, CITEO already applies a 50% bonus to contributions by weight for polyethylene where there is at least 50% recycled material. Discussions with the French Ministry indicate that great importance is placed on incentivising recycled content through EPR, in large part because alternative methods of stimulating increased recycled content – specifically using the tax system to do so – are currently considered not to be feasible from a political perspective.<sup>19</sup>

Indeed, it is proposed that the incentives for incorporating recycled content are to be broadened and strengthened. For 2020, the 50% bonus will also apply to polypropylene that incorporates 50% recycled content. The recycled content can be derived from either the household, or commercial and industrial, packaging streams.

For 2021 it is proposed to further amend the incentive as follows:<sup>20</sup>

- Polyethylene packaging
  - 30% bonus if incorporation of 50% of recycled content derived from either the household, or commercial and industrial, packaging streams
  - 50% bonus if 50% recycled content is achieved, and within this, the packaging contains at least 20% recycled content derived from the household packaging waste stream
- Polypropylene packaging
  - 30% bonus if incorporation of 50% of recycled content derived from either the household, or commercial and industrial, packaging streams
  - 50% bonus if 50% recycled content is achieved, and within this, the packaging contains at least 20% recycled content derived from the household packaging waste stream
- Polystyrene packaging
  - 20% bonus if the packaging contains at least 50% recycled content derived from the household packaging waste stream

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<sup>17</sup> ETO (2019) Calculation of Packaging Mass, available at

<https://www.eto.be/en/producerimporter/calculation-mass-of-packaging/>

<sup>18</sup> Valipac (2019) Tariff 2019, available at <https://www.valipac.be/en/existing-clients/#Yourdeclaration>

<sup>19</sup> Personal communication with Léonard Brudieu, Chef du bureau de la prévention des déchets et des filières de recyclage (REP), Ministère de la Transition écologique et solidaire, 18/06/2019

<sup>20</sup> Citeo & Adelphe (2019) Proposition de Citeo et Adelphe pour l'ecomodulation du tarif 2020, 29 May 2019

### 4.1.1 Summary of Existing Practices and Future Plans

Existing practices and future plans exhibit a number of characteristics. These include:

- Differentiation of fees within a material category – moving away from a single fee level for all packaging of a certain material type, to a greater disaggregation in the fee structure – which is likely to more closely represent the net costs associated with managing the specific formats at end of life;
- Explicitly seeking (through the requirements to be met to be eligible for inclusion in certain fee categories - as in Italy – or through the application of penalties (e.g. Portugal, France) to remove elements disruptive to the sorting and recycling processes; and
- To encourage the use of formats that are not just theoretically recyclable, but likely to actually be sorted and recycled.

There are also many notable differences in the approaches taken. For example, recycled content is encouraged – in a targeted way – in France, and required to be promoted under the German Packaging Act, but this is not widespread.

### 4.1.2 Greater Granularity of Fee Structure

While some EPR schemes simply apply a fee per unit weight based on the broad material category, e.g. plastics, there is a trend towards greater granularity of fee structure.

Fost Plus in Belgium has gone some way in providing a more granular fee structure, the recyclable plastic packaging elements of which are shown in Table 4-3.<sup>21</sup> For the time being only three different fee levels apply to these 13 formats by which members already have to report, but the intention is to provide further differentiation as information is gathered on the actual costs attributable to each format.

Not included in Table 4-3 are EPS, XPS and compostable plastics, complex packaging of which the majority is plastic, and laminated plastic/aluminium, as these fall under the 'recoverable' category (016), with a higher fee of 0.6181 EUR/kg.

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<sup>21</sup> Fost Plus (2019) Les tarifs Point Vert 2019, available at [https://www.fostplus.be/sites/default/files/PDF/groenepunttarieven\\_2019\\_v2\\_fr\\_3.pdf](https://www.fostplus.be/sites/default/files/PDF/groenepunttarieven_2019_v2_fr_3.pdf)



**Table 4-3: Fost Plus Tariff Structure for Recyclable Plastic Packaging 2019**

<b>Code</b>	<b>Materials</b>	<b>Tariff (EUR/kg)</b>
<b>005-01</b>	Transparent no colour	0.3463
<b>005-02</b>	Transparent blue	0.3463
<b>005-03</b>	Transparent green	0.3463
<b>007</b>	HDPE Bottles and Flasks	0.3418
<b>011-01</b>	PP - Bottles and flasks and other rigid	0.5103
<b>011-02</b>	PS – Rigid packaging except EPS and XPS	0.5103
<b>011-03</b>	HDPE – Rigid packaging other than bottles and flasks	0.5103
<b>011-04</b>	PET – Transparent, other than no colour, blue or green	0.5103
<b>011-05</b>	PET – Rigid packaging other than bottles and flasks, transparent	0.5103
<b>011-06</b>	PET – Bottles and flasks, opaque	0.5103
<b>011-07</b>	PE – films	0.5103
<b>011-08</b>	Other rigid plastics (except EPS, XPS, compostables)	0.5103
<b>011-09</b>	Other films (except compostables)	0.5103

Source: Fost Plus

The development of a more granular fee structure for all packaging formats is an important step in moving towards a fairer approach whereby the fees paid better reflect the net costs that the system incurs for managing the specific packaging format, in line with the principle outlined in Section 5.5. Member States should move towards a more granular fee structure.

## 4.2 EEE

France is the only country using an explicit fee modulation method for EEE.

The French system uses various combinations of criteria, including:

- Post-consumer recycled (PCR) plastic content;
- Ease of disassembly;
- Ease of upgrade;
- Availability of spare parts;
- Availability of technical information to facilitate professional repair;
- Lack of coatings that can inhibit recycling;
- Lack of hazardous substances (any brominated flame retardants); and
- All LED (lamps only).

Modulation in France is restricted to major EEE categories / sub categories as set out in Table 4-4.<sup>22</sup>

**Table 4-4: Products that are modulated under the French system and related criteria**

Product group	Ecodesign criteria (bonus case; opposite applies to the malus)
Refrigerator/ freezer/combined	Refrigerant with GWP <15 and Technical documentation for electrically authorised repairers and Availability of essential spare parts for equipment use
Washing machine	Essential spare parts for equipment use for 11 years and Incorporation of post-consumer recycled plastic (> 10%)
Dishwasher	Provision of essential parts for equipment use for 11 years and Incorporation of post-consumer recycled plastic (> 10%)
Laptop	Absence of paint and coatings incompatible with recycling and reuse on plastic parts >100g and Incorporation of post-consumer recycled plastic (> 10%) and Product upgrade with standard tools, including memory drives, chips and cards
Tablet computers	No plastic parts > 25g containing brominated flame retardants and Compatible software updates, essential for the basic use of the device

<sup>22</sup> Available at <https://www.ecologic-france.com/images/medias/document/14655/ecologic-household-eee-price-list-on-20180815.pdf>

<b>Coffee maker/ kettle/tea maker</b>	Provision of essential parts for equipment use for 5 years and Provision of technical documentation for electrically authorised repairers
<b>Vacuum cleaner</b>	No plastic parts > 25 grams containing brominated flame retardants and Technical documentation for electrically authorised repairers and Availability of essential spare parts for equipment use
<b>Electric drill / screw driver</b>	Technical documentation for electrically authorised repairers and Availability of essential spare parts for equipment use
<b>(Portable) games console</b>	Technical documentation for electrically authorised repairers and Availability of essential spare parts for equipment use and No brominated flame retardants in plastic body of equipment
<b>Mobile phone</b>	Standardised connections (charger and other connections) and Mutually compatible software updates, essential for the basic use of the device
<b>Desktop PC</b>	Absence of paint and coatings incompatible with recycling and reuse on plastic parts >100g and Incorporation of post-consumer recycled plastic (> 10%) and Product upgrade with standard tools, including memory drives, chips and cards
<b>Printer</b>	Complete disassembly capability with commercially available standard tools and Provision of essential parts for equipment use for 5 years
<b>Lamps</b>	LED sources exclusively

Source: Ecologic

The system uses (in broad terms) a +/- 20% bonus/malus adjustment to the base fee under the Visible Fee (recycling charge) shown at the point of sale. The product has to meet all of the criteria in the sub-category to get the bonus, and only fail on one criteria to get the malus. There is middle ground defining standard practice where a product is neither 'good' nor 'bad'. The malus and bonus charges (ex VAT) for a sample of EEE (as charged by ESR – the merged Eco-Systeme/Recyclum, PRO) are shown in the final column of Table 4-5.

**Table 4-5: Example of ESR Bonuses/Maluses**

<b>WASHING MACHINE DISHWASHER</b>	Availability of spare parts essential for the equipment use during 11 years <u>or</u> Integration of postconsumer recycled plastic (minimum threshold of 10%)	—	<b>CAT 04</b>	14010	€ 6.67
	Unavailability of spare parts essential for the equipment use during 11 years <u>and</u> no integration of postconsumer recycled plastic (minimum threshold of 10%)	—	<b>CAT 04</b>	14011	€ 8.33

VACUUM CLEANER	Lack of plastic parts >25 g containing brominated flame retardants. <u>and</u> availability of technical documentation for authorised repairers <u>and</u> availability of spare parts essential for the equipment use	—	CAT 05	25010	€ 0.83
	Presence of plastic pieces >25 g containing brominated flame retardants. <u>or</u> unavailability of technical documentation for authorised repairers <u>or</u> unavailability of spare parts essential for the equipment use	—	CAT 05	25011	€ 1.00
TABLET	Lack of brominated flame retardants in the tablet plastic structure <u>and</u> presence of software updates, compatible with each other and essential for the good working of the appliance	≥ 7 "	CAT 02	32060	€ 0.42
	Presence of brominated flame retardants in the tablet plastic structure <u>or</u> lack of software updates, compatible with each other and essential for the good working of the appliance	≥ 7 "	CAT 02	32061	€ 0.84

Source: ESR

## 4.3 Batteries

### 4.3.1 The EU Battery Market

Every year, approximately 1,100,000 tonnes of automotive batteries, 491,000 tonnes of industrial batteries, and 227,000 tonnes of consumer batteries, including portable batteries and integral product batteries, are placed on the market in the European Union.<sup>23,24</sup> There are several main types of non-rechargeable batteries (primary batteries); zinc, alkaline, silver zinc, lithium metal (alkaline now being the most common), and eleven types of rechargeable batteries (secondary batteries), the most common being nickel metal hydride, lithium-ion (and variants) and lead-acid (mostly used in automotive and industrial applications). Each has its own pros and cons and particular suitability for specific applications, e.g. depending on the voltage and current discharge level.

Rechargeable batteries vary in terms of their capacity to store charge (mAh), their energy density (W/kg – i.e. how much power they can pack into every kg of material used), and the number of recharge cycles that they can tolerate before performance drops significantly. The market is changing drastically however. EPBA data for portable batteries show that sales of Li-ion quadrupled between 2004 and 2015 and are still growing quickly. In 2018, the market share of primary Zinc/Carbon batteries (by weight) had decreased to 52%, of which 87% were sold separately, 13% integrated in an appliance.<sup>25</sup> The market share of rechargeable lithium batteries (by weight) has increased to 29%, of which 88% is sold integrated in an appliance. Only 12% is sold

<sup>23</sup> Study in support of evaluation of the Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators, Öko-Institut/Ernst & Young, 2019

<sup>24</sup> Eurostat, data for 2017 (excluding Italy, Malta and Romania).

<sup>25</sup> All data from Eucobat/EPBA

separately, mainly as replacement of integrated batteries. For NiMH batteries, 46% is sold separately, 54% is sold integrated in an appliance.

Rechargeable Li-ion batteries are now being widely used in cordless appliances and in e-mobility applications. While those integrated in EEE products are captured through WEEE reprocessing, and automotive and industrial batteries are captured through B2B routes, there is now the potential for large and heavy rechargeable batteries, for example from e-bicycles, scooters, cordless vacuum cleaners and power tools, to arise in households. Some of these batteries may not meet the portable batteries definition, i.e. if they are over 4kg or designed specifically for professional or industrial use, and hence would not be the responsibility of the battery PROs.<sup>26</sup>

### 4.3.2 Current Approaches

In EU Member States, the majority of battery EPR fee structures (for portable batteries) are based on battery weight, with some schemes also using additional factors such as type and chemistry to set costs. Such approaches reflect the collection and recycling cost of a particular chemistry, and taking weight into account (as with most WEEE systems) rewards lighter weight and hence reduced use of materials in the product. Eco-modulation could be used to make recycling cheaper and easier, for example by influencing design for recyclability, but also to drive the wider circular economy benefits around durability and reuse, i.e. of rechargeables, and use of more sustainable battery materials.

France has the most developed eco-modulation system for portable batteries. The SCRELEC fees for portable batteries, rechargeable ('secondary batteries' or accumulators) and single use (primary) batteries are shown for 2018 in Figure 4-4.

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<sup>26</sup> Any battery over 4 kg is classed as industrial. Batteries below 4 kg may still be classed as industrial if they are designed exclusively for professional or industrial use.

Figure 4-4: SCRELEC Fees 2018


Accumulator		Contribution in Euros excl. taxes per kilo
Secondary Lithium		0,479
Nickel metal hydride (Ni-MH)		0,398
Lead		0,559
Nickel-Cadmium (Ni-Cd)		0,998

Battery		Contribution in Euros excl. taxes per kilo
Alkaline		0,372
Zinc carbon		0,559
Primary lithium (cylindrical and button cell)		2,448
Button Cell (alkaline, Silver oxyde, zinc air...)		3,672
Zinc Air		0,439

Bonus



Bonus		Contribution in Euros excl. taxes per kilo
Lithium accumulators with Cobalt		0,456
Alkaline battery « Eco »		0,360

Source: SCRELEC

It is notable that:

- the secondary (rechargeable) batteries have a lower fee in general than the primary single use batteries;
- a bonus is applied for use of recycled content (Eco Alkaline) and less harmful chemistries (lithium with cobalt which Screlec suggest have “a positive economic and environmental impact due to their composition and lifetime”;<sup>27</sup>
- the bonus is small – 0.456 vs 0.479 (5% reduction) and 0.36 vs 0.372 (a little over 3% reduction); and
- the fees per battery are very small – e.g. €0.0086 for a single LR6 (AA) that might cost at least €0.5, i.e. just 2% or so of the product price.

France’s Circular Economy Roadmap (2018) has guided the review of fee modulation, and will likely make it more stringent than at present to have greater impact. France is considering modifying its modulation approach to include lifespan (charge capacity in mAh), rechargeability and the use of recycled materials. In particular the French legislation foresees:<sup>28</sup>

<sup>27</sup> Eucobat do not believe that the use of Cobalt offers an environmental benefit.

<sup>28</sup> Information from Eucobat

- Malus for Zinc Carbon batteries (+70% in 2020, +100% in 2022 vs alkaline), given the low capacity and short lifespan.
- Bonus for NiMH rechargeables (-50% vs alkaline)

## 4.4 Impacts of Fee Modulation

It is difficult to determine the extent to which fee modulation to date has contributed to stimulating changes to product or packaging design. In part this is due to the limited application of fee modulation, and also a lack of detailed evaluation in the cases where it has been implemented on the effects of modulation (controlling for other drivers).

This is noted by IEEP in a recent study focusing on plastic packaging:<sup>29</sup>

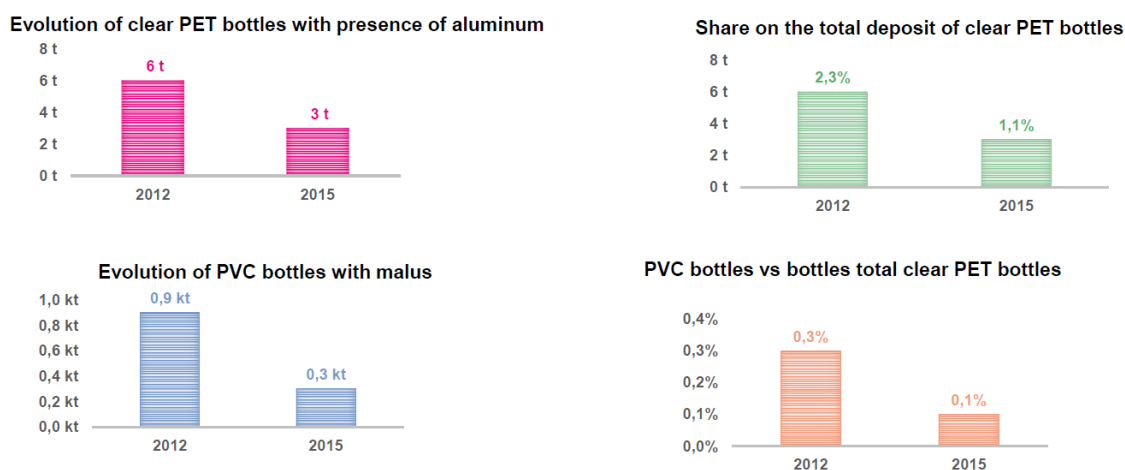
*Data is lacking to assess impacts of EPR schemes*

However the authors state that:

*EPR measures have so far largely failed to incentivise packaging producers towards eco-design.*

In France, modulated fees have been associated with an increase in the use of packaging with sorting instructions attached, while the use of PVC bottles has declined.<sup>30</sup> Some examples of changes which have been taking place are shown in Figure 4-5, Figure 4-6 and Figure 4-7.

**Figure 4-5: Evolution in Bottle Formats in Response to Modulation**

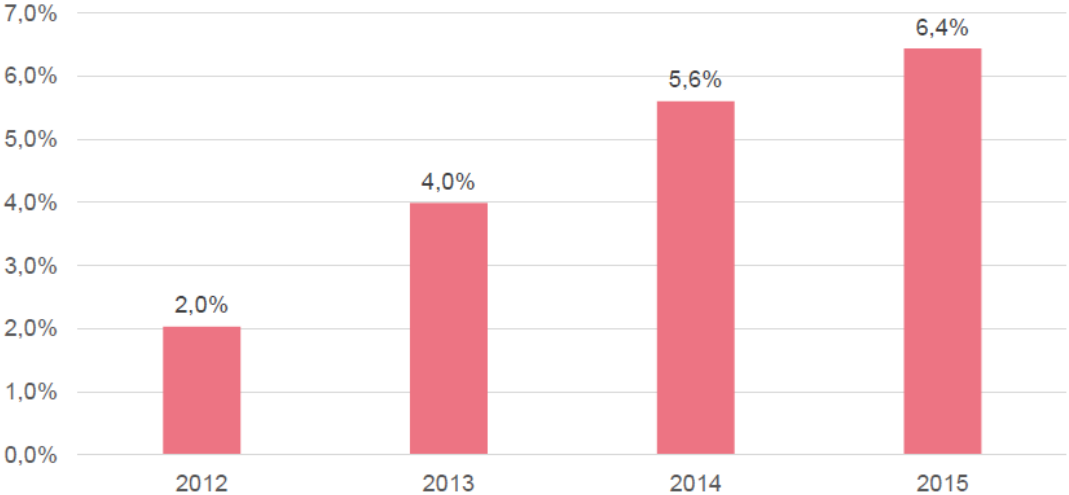


Source: CITEO

<sup>29</sup> IEEP (2017) EPR in the EU Plastics Strategy and the Circular Economy: A focus on Plastic Packaging, November 2017

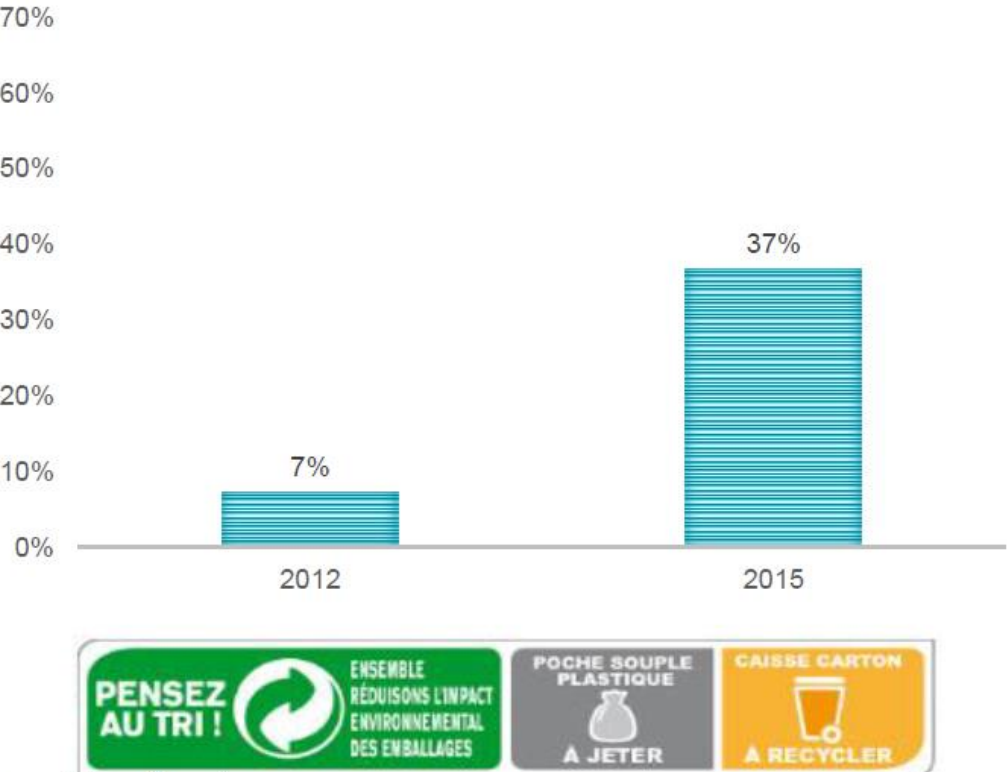
<sup>30</sup> CITEO (2019) Incentives for Eco-Design in the French EPR Scheme for Household Packaging, paper given at Ecomodulation workshop - Brussels, February 2019

**Figure 4-6: Evolution in the Share of Packaging Receiving a Bonus**



Source: CITEO

**Figure 4-7: Evolution in Packaging Receiving Bonus Related to Labelling / Communications**



Source: CITEO



While there is a lack of assessment regarding fee modulation impacts, some commentary is available for the French system of ‘eco-modulation’. A review by Ademe, notes that modulation has resulted in: <sup>31</sup>

- Better eco-design of products, extension of the life time of products, better recyclability, use of recycled materials in the manufacturing of equipment, decrease of pollutants;
- Limited impact on the consumer, much greater impact on the producer;
- A measure which penalizes the low-cost products; and
- Support to the repair sector.

However, an earlier review by Didier and Sittler (2014) reports that the eco-contribution system experienced difficulties in implementation and unequal results depending on the sector. They indicate several points for improvement, including:

- 1) Increase the amplitude of modulation; and
- 2) Broaden the possibilities of modulation of scales throughout the product life cycle, given that some eco-design objectives could conflict.<sup>32</sup>

It’s notable that France has taken a lead on modulation of fees, and while it is difficult to establish the precise extent to which modulation has driven those changes, it is possible to be relatively certain that the extent of the changes seen would likely have been greater had other Member States modulated similarly.

That said, the extent to which this holds true is possibly greater for truly global products such as mobile phones, than for, for example food packaging, which, given differences in international consumption patterns could be more differentiated at a national level.

In the 2016 WEEE Compliance Promotion Exercise, it is noted in respect of France that:<sup>33,34</sup>

*Overall, producers stress that one of the issues remains how to evaluate the impact of the criteria. As mentioned, one of the indicators is that bad practices disappear. There has not yet been a thorough study on the impact of the eco-modulated fees. **To have a general impact on eco-design, eco-modulated fees should be European.***

Indeed the OECD, in its recently updated guidance, observes that:<sup>35</sup>

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<sup>31</sup> Fangeat, E. (2017) French experience Modulation of fees, Brussels, 24 October 2017

<sup>32</sup> Evelyn Didier, and Sittler, E. (2014) *Mieux concevoir les produits pour mieux valoriser les déchets, Rapport d’information fait au nom de la commission du développement durable, des infrastructures, de l’équipement et de l’aménagement du territoire*, 2014, <https://www.senat.fr/rap/r13-143/r13-1436.html#toc71>

<sup>33</sup> DG Environment (2017) WEEE Compliance Promotion Exercise, Final Report, December 2017

<sup>34</sup> Emphasis added

<sup>35</sup> OECD (2016) Extended Producer Responsibility – Updated Guidance for Efficient Waste Management

*Considering that incentives from small local markets will not be taken into account for the design of global consumer products, the influence of individual EPR schemes is limited (Didier and Sittler, 2014; Vanderstricht, 2014; Séguin, 2014).*

*International harmonisation can enhance the impact of modulated fees for global consumer products*

This is consistent with what has been heard from stakeholders - that if fees are modulated in just one Member State, the incentive to change packaging or product design will be limited. This is because, in many cases, brands are designing their packaging for multiple Member States, or perhaps for the global market. The potential for modulation in one Member State to influence design choices that may be determined at a regional or indeed global level, is thus going to be weaker than if such an incentive were faced across a larger proportion of the market.

The lack of firm evidence of impact should not be a reason to avoid the use of modulated fees. Instead it is possible to draw lessons from existing experience, and, for example, highlight the importance, as elaborated in Section 5.1 and Section 5.12, of harmonising modulation criteria across Member States, and seeking to amplify the effectiveness of modulation through co-ordination, to give a consistent price signal at scale.

In addition, it's important to note that there are other factors which may be more significant than modulated fees in driving change.<sup>36</sup> Accordingly, it is important to bear in mind, as explained in Section 5.3, the role of other policy measures.

## 4.5 Why is Modulation Not Widely Applied?

While until recently there was very limited application of modulated fees within EPR schemes, as can be seen in Section 4.0, modulation is now being more broadly applied, (or at least planned for).

In seeking to explain why there was formerly little interest, it's important to remember that the main purpose of EPR has been to shift the costs of meeting recycling targets on to producers. Accordingly, it might be reasonable to expect that:

- When recycling targets are relatively low, the marginal cost of recycling might reasonably closely approximate the average cost of recycling. As explained in more detail in Section 5.5, this might feel acceptable to all producers, especially where:
  - The EPR scheme does not require full net cost coverage; and
  - Targets are being met

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<sup>36</sup> OECD (2016) Extended Producer Responsibility - Updated Guidance for Efficient Waste Management

- If one or both of the points above hold true, there would be little incentive from a purely financial perspective to seek changes to the status quo

The OECD notes that:<sup>37</sup>

*Establishing modulated fees involves additional administrative costs so they should be proportional to the environmental and or financial benefits*

In the case where targets are being met, and the fees paid by producers are relatively low and/or approximate the marginal cost of recycling, it may well be seen as difficult to justify the introduction of modulation, and the administrative costs that would arise.

However, with higher recycling targets, and the stricter associated measurement method, marginal costs are likely to diverge significantly from average costs (as explained in Section 5.5). Thus, even in the absence of the encouragement to modulate under Article 8a, it might be expected that more Member States would, of their own volition, introduce fee modulation.

Moreover, with greater public awareness of the issues relating to materials management – and plastic packaging in particular – many brands are now focusing much greater effort on aspects such as design for recyclability. There is thus a competitive driver for such companies – who have invested in product and packaging design – to seek to have the benefits of their product/packaging reflected in the fees they pay (relative to the product/packaging of competitors who have not made such changes).

## 5.0 Principles for Fee Modulation

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In the sections that follow a number of over-arching general principles applicable to fee modulation are presented. These principles have been developed through an iterative process of stakeholder engagement in the course of the project, and reflection on how to apply fee modulation to best effect in meeting the requirements of the relevant Directives. This has involved reviewing position papers, workshops, meetings and calls with specific stakeholder groups (including producers, EPR schemes, NGOs and Member State experts) and one-to-one email correspondence. Further details of engagement with stakeholders is provided in Appendix A.8.0.

### 5.1 Harmonisation

Fee modulation criteria across Member States should be harmonised.<sup>38</sup> This is important not only to ensure the smooth functioning of the internal market, but also to maximise the potential for positive environmental change. All else being equal, the magnitude of

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<sup>37</sup> OECD (2016) Extended Producer Responsibility - Updated Guidance for Efficient Waste Management

<sup>38</sup> To ensure harmonisation, the option of an implementing act could be used if guidance alone does not bring about sufficient consistency of approach across Member States

the shift achieved by a certain level of fee modulation will be greater if it is replicated consistently across many - or better still all - Member States. The application of a consistent signal using harmonised criteria will give a much stronger, and indeed clearer, incentive for producers to, for example, change their packaging design, than if different criteria were applied across Member States.

This issue – of the importance of fee modulation providing a consistent price signal to producers across Member States - has come across very strongly in the workshops and through stakeholder engagement. For example, members of the WEEE Forum (a not-for-profit association of 36 WEEE producer responsibility organisations in Europe and globally) are firmly in support of harmonised criteria, and similar views were put forward in a meeting with Digital Europe.<sup>39</sup>

In EUROOPEN's recommendations on the principles to be applied, the first is that approaches to national modulation of EPR fees:<sup>40,41</sup>

***Are harmonised and applicable across the EU in order to avoid divergent national incentives/penalties for producers that impact the EU's Internal Market, and to encourage more harmonised sorting and recycling outcomes across Europe. Any erosion of the EU's Internal Market that results in divergent/disparate packaging measures across the EU will likely divert resources (financial & human capital) from innovation to legal compliance and hence adversely impact the potential for investments in sustainable innovations (including in packaging design, packaging materials and recycling/sorting technologies).***

EUROOPEN cites the following as good practice examples:

*Criteria for modulation across Europe, should be as harmonised as possible.*

*EU-harmonised disposal and sorting instructions on-pack, which are easy to understand and actionable to enable consumers to play their key role in feeding the correct collection systems*

FoodDrinkEurope makes similar points in its draft principles on EPR fee modulation, suggesting that the setting of the modulation of EPR fees should:<sup>42</sup>

*Be harmonized and applicable across the EU*

*Avoid market restrictions and distorting the free flow of products (e.g. bonus criteria on national logos for consumer information)*

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<sup>39</sup> WEEE Forum Presentation, Basel May 2019, and Digital Europe/HP Presentation, Brussels March 2019.

<sup>40</sup> EUROOPEN (2019) Extended Producer Responsibility: EU Harmonised Principles for National Modulation of EPR Fees for Packaging, May 2019.

<sup>41</sup> Emphasis in original document

<sup>42</sup> FoodDrinkEurope (2019) Draft FoodDrinkEurope principles on EPR fee modulation, June 2019.

A position paper submitted on behalf of 58 national and EU-level organisations representing the packaging supply chain further emphasizes this view, recommending that guidelines for EPR fee modulation should be:<sup>43</sup>

*Harmonized at EU level in order to avoid divergent national approaches that potentially create contradictory packaging design signals.*

Harmonisation at EU level does not, of course, mean that the magnitude of the modulation would be the same, as the focus is on the harmonisation of the criteria. Accordingly, while the *magnitude* of the modulation (relative to a base fee) might vary between different Member States, the *direction* of the modulation would be consistent.

In addition, Member States should work towards harmonisation of reporting formats and frequencies, and of fee categories as this will have the effect of:

- Improving data;
- Reducing administrative burden (see Section 10.3.2); and
- Increasing the potential for identifying and thus tackling free-riding (see Section 11.0).

In the absence of an implementing act, there is a key role to be played through Member State collaboration to seek the greatest possible level of harmonisation.

## 5.2 Appropriate Criteria

It is important to note the following points:

- It is not necessary to apply *all* of the criteria mentioned in Article 8a(4)(b) within an EPR scheme. For example, some criteria such as durability and reparability are less relevant for packaging than reusability and recyclability. For EEE, reparability and durability are more relevant;
- Article 8a(4)(b) does not exclude the possibility of applying other criteria, beyond those mentioned;
- As a general principle, it is better to focus a policy instrument on doing one thing well, than on seeking to achieve multiple objectives.

There is a risk of causing undue complexity in seeking to apply too many criteria at the same time, both in administrative terms, and in respect of what modulation is seeking to achieve. If, for example, a PRO is required to modulate on one criteria, this provides greater clarity, and indeed transparency (see Section 5.8) to all stakeholders in respect of the objectives of the scheme, and removes the risk of tensions between potentially competing criteria.

While there might be a temptation to achieve multiple policy objectives through EPR (as described in Section 4.1 in respect of incentivising recycled content in France) it's

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<sup>43</sup> Packaging Supply Chain Guiding Principles on EPR fee modulation & the legal review of the Essential Requirements for packaging May 2019

important, as described in Section 5.3, to consider the potential role of other policy measures that may be more appropriate to bring about change in respect of specific criteria.

### 5.3 The Role of Other Policy Measures

Fee modulation within EPR schemes is just one of a number of policy tools that may be used to achieve specific objectives. It's important to consider the extent of change that modulation can bring about given the specific criteria to be applied, and whether other tools would be likely to bring about greater change in a more efficient way. For example, to dissuade the use of specific single-use packaging items and thus promote uptake of reusable alternatives, providing a *consumer-facing* incentive at the point of sale, such as a tax, levy or charge, can provide a stronger and more direct incentive for change than to provide a *producer-facing* incentive through fee modulation.

Whether fee modulation is the most appropriate tool will depend on a number of factors, such as:

- The magnitude of the fee relative to the cost of the product or packaging that is subject to modulation. If the fee is very small relative to the cost of the product or packaging, other tools such as taxation may be better able to provide a stronger financial incentive, or indeed regulations such as product/packaging standards or eco-design requirements may be more suitable. Of relevance here is the way in which the fee modulation might be expected to drive change - be it:
  - Through providing a direct financial incentive that is itself sufficient to drive change by the producer; or
  - Through providing a signal - perhaps to the ultimate consumer, that the item they are purchasing incurs a malus, or a bonus - that seeks to influence their purchasing decisions, and thus drive change in the producer's design choices?
- The extent to which the fee modulation (and this will depend on the criteria selected) will provide a signal for change across the whole market, or whether it will be of relevance only to a few specific applications.
  - In general terms, where fee modulation according to a specific criteria provides a widespread consistent signal across the entire market, it can be considered an appropriate application.
  - Where fee modulation according to a specific criteria has a more limited relevance to only sections of the market, other more targeted instruments may be more suitable; and
- Where modulation according to a number of different criteria is being considered, some criteria will, for reasons stated above, be more appropriate than others. Given the general principle that is better to focus a policy instrument on doing one thing well, than on seeking to achieve multiple objectives, where there are several possible criteria, consideration should be given as to whether the 'less appropriate' criteria (in line with the points made above) can be met through other policy instruments.

Account should also be taken of existing regulatory interventions, and any anticipated future changes to these, such as improved product standards. This is to ensure that fee modulation is consistent with and supportive of other relevant regulations (e.g. through referencing Eco-label criteria as a possible basis for modulation), and that the incentives provided by fee modulation do not get ‘overtaken’ by, for example, minimum product standards.

## 5.4 Ensuring Cost Recovery

Article 8a(4) of Directive 2008/98/EC states that:

*Member States shall take the necessary measures to ensure that the financial contributions paid by the producer of the product to comply with its extended producer obligations:*

*(b) in the case of collective fulfilment of extended producer responsibility obligations, are modulated, where possible, for individual products, or groups of products, notably by taking into account their durability, reparability, re-usability and recyclability and the presence of hazardous substances, thereby taking a life-cycle approach and aligned with the requirements set by relevant Union law, and where available, based on harmonised criteria in order to ensure a smooth functioning of the internal market*

Article 8a(4) also states that such financial contributions:

*(c) do not exceed the costs that are necessary to provide waste management services in a cost-efficient way. Such costs shall be established in a transparent way between the actors concerned.*

Article 8a(4)(c) is addressed in detail in Section 3.0 on the subject of necessary costs. However, in respect of fee modulation, it is important to clarify that Article 8a(4)(c) does **not** mean that producers of a product, or an item of packaging, can only be presented with fees that reflect the net end-of-life management costs of managing that specific product, or item of packaging. To be limited in such a way would effectively mean that modulation of fees would not be possible.

Within the constraint of cost coverage for EPR schemes as a whole (in that the overall quantum of fees raised should cover overall costs), and to the extent that fees accurately reflect the end-of-life costs of specific products or items of packaging, if modulation is to take place, the fees for some products or items of packaging will, of necessity, be less than the actual net costs associated with their management. For others, accordingly, the fees will be greater than the actual net costs associated with their management.

This then raises a challenge of how to ensure costs are indeed covered.

If the levels of **both** the *bonus* and the *malus* are fixed, and fee modulation encourages a greater- or lesser- than anticipated shift towards formats that pay less than their true cost, revenue instability may result.

To remove the risk of revenue instability, it is recommended that the level of the malus only be set, and the proceeds of the malus distributed to those formats eligible for a bonus. Accordingly, all producers will know in advance what is required to achieve a bonus, but they won't know the level of the bonus they will receive.

## 5.5 Better Reflecting Net Costs through the Fee Structure

Working towards the appropriate level of 'granularity' of the fee structure is an important component of more accurately reflecting the net costs of end-of-life management of the product or packaging format. This is an important aspect in its own right, even in the absence of explicit modulation according to specific criteria. This point can be illustrated through reference to the situation with packaging.

In seeking to achieve a recycling target, it is most cost-effective to target formats and circumstances where the costs are lowest. At lower recycling rates it might be supposed that average costs – which in the case where an EPR scheme already covers all costs, are represented by the flat fees paid by weight of material - are reasonably approximate to the costs of recycling each packaging format that is recycled (of course the extent to which this holds true depends upon the shape of the cost curve).

However, as recycling targets are raised, it is necessary for additional packaging formats to be recycled and thus contribute to meeting the target. Unless the cost curve is relatively flat (and empirical evidence suggests that it isn't), the actual cost of recycling the marginal formats might be significantly above the costs of recycling the lowest cost formats. At higher recycling rates, the divergence from average costs (represented by flat fees based on material alone) can reasonably be expected to be greater than at low recycling rates.

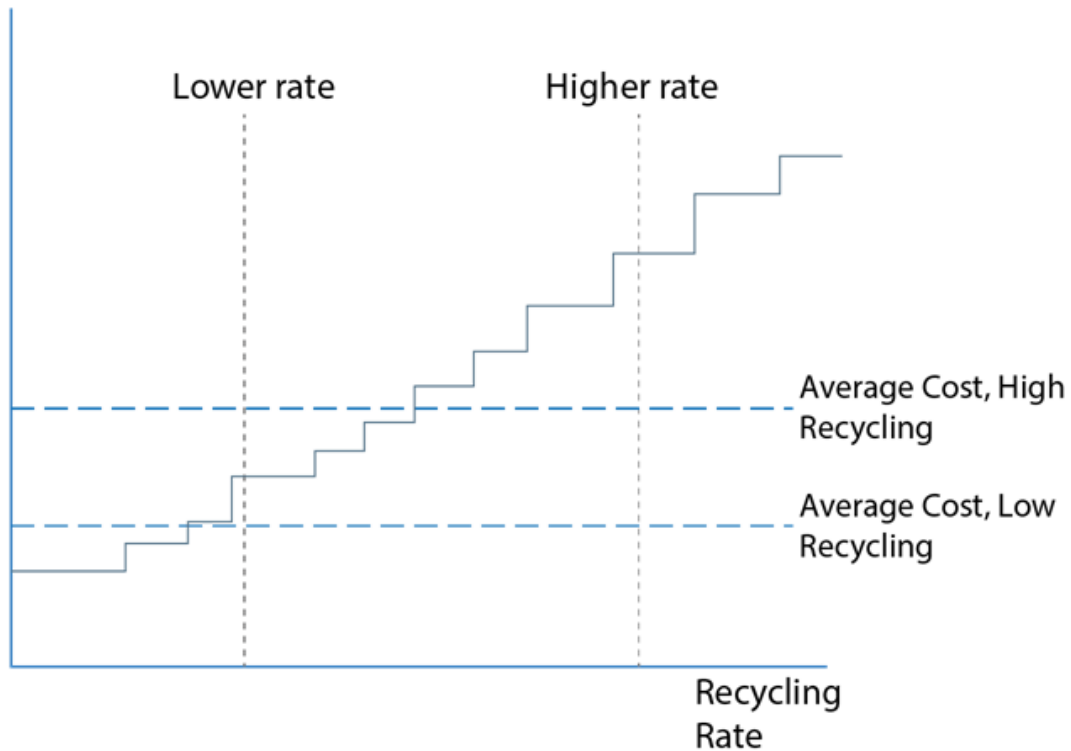
This is illustrated in a basic manner in Figure 5-1, which shows a stylised graphic representing the marginal cost of recycling packaging of a given material. Each horizontal section of the stepped line is representative of one or more packaging formats for which the cost of recycling is roughly equivalent.

This immediately raises the question of fairness. A basic principle in the fee structure, therefore, is that it should be fair, with higher per tonne fees for formats which cost more to recycle. A move away from a flat fee structure, to one that is more granular in nature, with different categories for different formats, is required. It is worth noting that greater granularity in fee structure is something that is sought by brands that are making efforts to increase the recyclability of their packaging. Quite understandably, they want their efforts to be reflected in the fees that they pay, rather than see their formats cross-subsidize the management of packaging from competitors who have not made the effort to change their packaging design.



**Figure 5-1: Cost Curve for Recycling Different Packaging Formats**

Cost of Recycling  
(activity-based  
costing)



While illustrated here with reference to packaging, this principle, of seeking to better represent net costs in the base fee structure (i.e. prior to any explicit fee modulation) holds true more generally.

## 5.6 Evidential Basis for Modulation

An important issue relates to the nature of the evidence provided by producers to demonstrate their liabilities under fee modulation. The European Recycling Platform raises this point in relation to evidence provided by producers to demonstrate their liabilities under fee modulation, posing the following questions:<sup>44</sup>

*Which enforceable evidence documentation is to be provided, that is trusted and accepted by all stakeholders? Also who decides about those?*

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<sup>44</sup> European Recycling Platform (2018) Modulated Fees: Discussion of Practical Implications from the Point of View of a Producer Responsibility Organisation (PRO/EPR)

EUROPEN makes a related point, recommending that:<sup>45</sup>

*Modulation should always be evidence-based, drawing upon readily quantifiable and/or verifiable characteristics so as not to introduce additional administrative complexity or operational burdens in reporting, measurement and calculation of EPR fees.*

In order to minimise administrative burden, and to provide clarity, it is preferable to use readily verifiable characteristics. An example, with reference to packaging, would be adherence to the design for recyclability criteria as shown in Table 6-1 and Table 6-2.

It is thus worth seeking to avoid modulating on a criteria for which the provision of evidence is unduly burdensome, or indeed the evidence itself is of a nature that is readily open to challenge.

## 5.7 Determining the Magnitude of the Modulation

An objective basis is required for determining the initial magnitude of the fee modulation to be applied. To a large extent this depends upon the subject of the EPR fee, and the magnitude of the cost of the packaging or product relative to the scale of the base fee. For packaging, the base fee is likely to be closer to the cost of the packaging than is likely to be the case for some high value electronic items, or indeed batteries. This relative scale matters, as it raises the question as to the way in which the fee modulation might drive change – is it:

- a) Through providing a direct financial incentive that is itself sufficient to drive change by the producer; or
- b) Through providing a signal – perhaps to the ultimate consumer, that the item they are purchasing incurs a malus, or a bonus – that seeks to influence their purchasing decisions, and thus drive change in the producer’s design choices?

Determining the starting point for the initial magnitude of the modulation involves consideration of the scale of change desired, and of the likely response from producers to different levels of fee modulation. However, expected responses may differ from actual responses, and determining, and adjusting, the magnitude of the fee modulation, will of necessity be an iterative process, with greater knowledge being gained over time.

Another consideration in respect of the magnitude of the modulation is the effect on investment on collection, sorting and recycling infrastructure for the product or packaging. Account should thus be taken of the effects on producers over a period of time to consider the present value financial impacts of a ‘no change’ scenario, where they simply pay the high modulated fees, against a scenario one where they incur the costs involved in new infrastructure and benefit from the lower fee.

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<sup>45</sup> EUROPEN (2019) Extended Producer Responsibility: EU Harmonised Principles for National Modulation of EPR Fees for Packaging, May 2019.

If the modulated element is set too low, then the scope for a producer to save money on modulated fees through increasing investment in recycling may be limited since the effect of modulation is weak. This is an important consideration in assessing the 'right' level of fee modulation.

## 5.8 Transparency and Consultation

The question of transparency relates in large part to the issue of the evidential basis for modulation, which as discussed in Section 5.6 should be readily verifiable, and serve to minimise administrative burden. For businesses (and especially SMEs) selling into numerous Member States, transparency and clarity is especially important, and administrative burden will be reduced through harmonisation not only of the fee modulation criteria (see Section 5.1) but also of fee structures (see Section 6.5.1) and of reporting requirements (see Section 10.4.2).

In respect of consultation, producers should be consulted on the extent of the incentive required to drive a shift behaviour (see Section 5.7), be it in packaging design, or product design, depending on the subject of the EPR scheme, but they should not be the ones to set the level of the fee modulation. That should be determined by the EPR scheme (or Central Register in the case where competitive schemes are in place) working in conjunction with the Member State authorities as appropriate.

Transparency and consultation also involves giving a clear steer to producers as to the future direction of change in respect of the magnitude of fee modulation (including if focusing on a specific format/item type). Giving notice, or at least an approximate indication, of the financial costs that producers will incur in future years – perhaps 3 to 5 years hence – if they do not alter their design will give a much stronger incentive to change than if doubts exist as to whether the incentive will endure beyond the year.

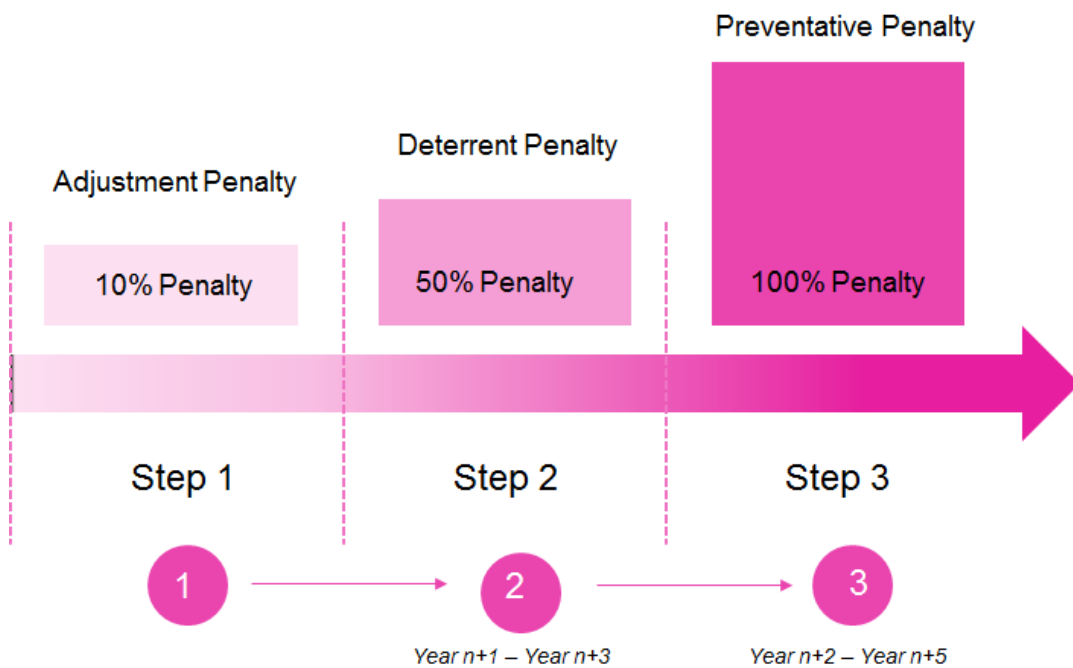
An example of this is to be found in the French EPR scheme for packaging. Citeo has established the principle of a continuous, and increasing, penalty.<sup>46</sup> The rationale for doing so is to give a more fulsome incentive for change, not only through increasing the magnitude of the penalty, but by giving those placing packaging on the market a clear signal as to the future direction of travel in respect of the penalty.

Under Citeo's approach any new criteria which means a penalty is incurred would see the penalty being set at 10% of the base fee in the first instance. The intention is that the penalty would be increased to 50% between 1 and 3 years after implementation, and to 100% between 2 and 5 years after implementation, as illustrated in Figure 5-2.

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<sup>46</sup> Citeo & Adelphi (2019) Proposition de Citeo et Adelphi pour l'ecomodulation du tarif 2020, 29 May 2019

**Figure 5-2: A Continuous and Increasing Penalty**



Source: Citeo

The transition from one stage to the next would be proposed following consultation with the consultative committee for eco-design and eco-modulation, and would be subject to the agreement of the Ministry. In certain circumstances, where it is deemed to be merited, the penalty can be directly raised to 50% or even 100%.

## 5.9 Encouraging Innovation

Fee modulation should not be used as a means to discourage innovation – indeed it should act as a spur to innovation in packaging and product design. Transparency over the criteria applied, and clear visibility of the future direction of fee modulation will make it easier for designers to understand how best to configure novel products or packaging.

## 5.10 Ensuring Periodic Review

Relating to both the magnitude of the modulation (Section 5.7) and transparency and consultation (Section 5.8) modulated fee levels should be reviewed periodically and adjusted as appropriate, while giving producers adequate notice of both shorter term changes, and longer term ‘direction of travel’ as emphasised in Section 5.8.

## 5.11 Accounting for Competing Schemes

Where there are competing PROs, it is important that at a Member State level the magnitude of fee modulation for a given product or packaging format is set centrally (e.g. by the central register) in absolute terms, i.e. the extent of the ‘bonus’ or ‘malus’ is set as an absolute monetary amount, rather than a % above or below the base fee for

the packaging or product type. This will ensure that competing schemes do not compete on the modulation element, but just on the 'base fee'. It should not be for the competing schemes to individually determine the magnitude of modulation to apply.

This will ensure a consistent incentive for change across competing PROs, and will mean that the different schemes can still compete on the base of fee price and levels of service.

## 5.12 Co-operation between Member States

As discussed in Section 5.1, a key principle is to seek to ensure harmonisation in the criteria applied in respect of fee modulation across Member States. Harmonised criteria should mean that while the *magnitude* of the modulation (relative to a base fee) might vary between different Member States, at least the *direction* of the modulation would be consistent.

However, it's important to recognise that, given the extent to which products and packaging are designed for use in multiple markets (including outside of the EU), the extent of the change in design brought about through fee modulation will likely depend on:

- a) The magnitude of the financial incentive provided by the fee modulation; and
- b) The scale of implementation relative to the size of the overall market for which the specific product or packaging is produced.

If all Member States were to co-ordinate, and modulate strongly (and at the same time) on the same aspect of packaging or a product, this would provide an emphatic and consistent signal which would be more likely to lead to a larger scale shift in design. Further co-ordination on both the announcement in advance of any such move, and providing a clear view to producers as to the way in which fees might increase further in subsequent years, as described in Section 5.8, will both assist producers in preparing for the change, and maximise the impacts of modulation.

## 5.13 A Note on Functionality

A number of stakeholders – in respect of packaging - have called for the functionality of the packaging to be taken into account in fee modulation. In EUROOPEN's updated recommendations on EU harmonised principles for national modulation of EPR fees for packaging, it proposes the following:<sup>47,48</sup>

***The end-of-life phase of packaging must not be divorced from the functionality of packaging as part of the packaged product. Packaging's roles and functionalities need to be taken into account and should not be penalised through***

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<sup>47</sup> EUROOPEN (2019) Extended Producer Responsibility: EU Harmonised Principles for National Modulation of EPR Fees for Packaging, May 2019.

<sup>48</sup> Emphasis in the original

*an isolated perspective and disproportionate focus on the end of life phase of packaging. This will avoid perverse incentives that impact the product as a whole (e.g. in relation to the protection of the resources invested into the product, preventing food waste, ensuring food safety and consumer health) and might in some cases lead to negative net environmental outcomes. Progress in packaging sustainability should be assessed within the context of the overall environmental impact of the packaged product to ensure a net environmental improvement over the whole life-cycle of the packaged product.*

Expra makes a similar point (in relation to the suggestion of modulation with reference to the recycling rate):<sup>49</sup>

*The recommended approach focuses on packaging only, without considering the performance and impact of the packaged product throughout its life cycle. When designing fee modulation, it is important to avoid unintended consequences (e.g. higher rates of food/product waste) which can ultimately be more harmful to the environment than poor packaging.*

EUROPEN presents, as an example of a practice to avoid:<sup>50</sup>

*Modulation based on overly simplistic dichotomies such as ‘monomaterial’ as opposed to ‘composite packaging’, as this does not necessarily take into consideration packaging’s functionality.*

FoodDrinkEurope in its draft principles on EPR fee modulation, in a similar vein suggests that the setting of the modulation of EPR fees should: <sup>51</sup>

*Be guided by food safety legislation, the functionality of packaging and the packaged products and Environmental assessment tools for packaging, such as life cycle assessment.*

However, it is clear that this is not the intention of Article 8a, Paragraph 4 of which requires Member States to take the necessary measures to ensure that the financial contributions paid by the producer of the product to comply with its extended producer responsibility obligations:<sup>52,53</sup>

*(b) in the case of collective fulfilment of extended producer responsibility obligations, **are modulated, where possible, for individual products or groups of similar products notably by taking into account their durability, reparability, re-usability and recyclability and the presence of hazardous substances, thereby***

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<sup>49</sup> Expra (2019) Eunomia’s study on fee modulation primary recommendations – Expra’s reactions, October 2019

<sup>50</sup> EUROPEN (2019) Extended Producer Responsibility: EU Harmonised Principles for National Modulation of EPR Fees for Packaging, May 2019.

<sup>51</sup> FoodDrinkEurope (2019) Draft FoodDrinkEurope principles on EPR fee modulation, June 2019.

<sup>52</sup> Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste

<sup>53</sup> Emphasis added

*taking a life-cycle approach and aligned with the requirements set by relevant Union law, and where available, based on harmonised criteria in order to ensure a smooth functioning of the internal market.*

There is no mention of the functionality of packaging being a criteria, or even having to be taken into account in any way, in the modulation of fees. It is for *those selecting the packaging in which to package their product* to determine the functionality they require, and in making their decision, account will, of course, be taken of the EPR fees they will be required to pay for the specific packaging type.

Importantly, for those selecting the packaging, the functionality is already ‘internalised’ in respect of the benefits it offers. The role of fee modulation is to provide a price signal to further influence the choice of those selecting their packaging through reference to other factors that might not otherwise be adequately accounted for.

## 5.14 A Note on Individual Producer Responsibility

In some instances, producers will discharge their end-of-life obligations themselves. While this might mean that the costs they pay reasonably approximate the true cost of end-of-life treatment (see Section 5.5), it will not necessarily equate to the costs faced by those under collective schemes where fee modulation is in place. For example, the products or packaging placed on the market by the producer discharging their responsibility individually might, under a collective scheme, incur a ‘malus’. If they are not paying this malus, and competitors are, this would arguably give them an unfair advantage.

There are a number of possible ways of dealing with such an issue – and the merits of taking action would have to be weighed up against the associated cost of taking action, the size of the market outside of collective schemes, and the risk of further migrating from collective schemes. Such approaches include:

- 1) Requiring all producers to join a collective scheme;
- 2) In the case where there is a single PRO, requiring the producer(s) outside of the scheme to pay the required bonus or malus to the scheme; or
- 3) In the case where there are competing schemes, requiring the producer(s) outside of the scheme to pay the required bonus or malus to the central authority that sets the modulated fees and acts as a clearing house.

## 6.0 Criteria for Packaging Fee Modulation

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Article 8a(4) of Directive 2008/98/EC states that:

*Member States shall take the necessary measures to ensure that the financial contributions paid by the producer of the product to comply with its extended producer obligations:*

*(b) in the case of collective fulfilment of extended producer responsibility obligations, are modulated, where possible, for individual products, or groups of products, notably by taking into account their durability, reparability, re-usability and recyclability and the presence of hazardous substances, thereby taking a life-cycle approach and aligned with the requirements set by relevant Union law, and where available, based on harmonised criteria in order to ensure a smooth functioning of the internal market;*

In the sections below the following possible criteria for modulation are discussed:

- Recyclability (Section 6.1);
- Recycling Rate (Section 6.2);
- Reusability (Section 6.3); and
- Recycled Content (Section 6.4).

Durability and reparability are not included, as they are of less relevance for packaging than for other products that might be subject to EPR.<sup>54</sup> Hazardous substances are not considered as a specific criteria for fee modulation. However, under the revision of the Essential Requirements, among other recommendations in respect of hazardous substances, is that they should always be noted as elements in the **NO** category of Design for Recyclability Guidance to ensure such items will incur a penalty under fee modulation of the type described in Section 6.1. Accordingly hazardous substances are not considered separately as a criteria for modulation, but incorporated within the criteria of recyclability.

## 6.1 Recyclability

Of the criteria noted in Article 8a(4)(b), recyclability is arguably the most directly appropriate, given the revised recycling targets for packaging waste.

Recyclability has widespread support among stakeholders as an appropriate criteria for fee modulation, especially among packaging producers and EPR schemes, who have the financial and legal responsibility for meeting the packaging recycling targets.

EUROPEN suggests that:<sup>55</sup>

*The concept of modulation of EPR fees should have an **explicit agreed purpose** i.e. to promote packaging waste prevention and recyclability, while not discouraging*

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<sup>54</sup> Reparability, for example in the case of industrial packaging, can be incentivised through the approach described in Section 6.3 on reusability, whereby, rather than explicit modulation in favour of reusability, reusable packaging has its own fee category, reflecting end of life costs, with fees only paid on the first occasion that the reusable packaging is placed on the market.

<sup>55</sup> EUROPEN (2019) Extended Producer Responsibility: EU Harmonised Principles for National Modulation of EPR Fees for Packaging, May 2019.



*innovative materials and processes intended to increase recycling, as well as to further inform producers on their eco-design considerations.*<sup>56</sup>

EUROPEN's recommendations go on to cite a 'good practice example' in this respect being:

*Modulation based on an agreed EU definition of "recyclability", which incentivises the use of packaging that is in accordance with sorting guidelines and covered by a recycling channel*

In a similar vein The Alliance for Beverage Cartons and the Environment suggests that EPR modulation should have an:<sup>57</sup>

*Explicit agreed purpose (to promote packaging recyclability)*

EXPRA also supports recyclability being the appropriate criteria for fee modulation, stating that eco-modulation should:<sup>58</sup>

*Reflect a 'recyclable' vs non-recyclable packaging' norm. A common definition for 'recyclability' would thus be required, which could follow the harmonised standard EN 13430 requirements. These encompass:*

- a. The packaging material being sortable*
- b. The existence of one or more recyclers*
- c. The existence of one or more companies using the secondary raw material*
- d. That there is a minimum available quantity*
- e. That the packaging material is compatible with industrially-available known sorting and recycling technologies*

In this context it's relevant that at the March 2019 Stakeholder workshop the distinction between packaging being 'technically' recyclable and the costs of recycling that packaging was emphasised, with support for thinking in terms of 'a scale of recyclability' rather than a distinction of recyclable versus non-recyclable. It was further noted that fees should be fair and based on how easy the packaging is to recycle.<sup>59</sup>

Modulating by the criteria of recyclability will have the effect of incentivising a move away from disruptive elements in packaging (such as specific inks, adhesives, labels, colours etc.) that cause yield loss and ultimately increase costs to producers and make the targets more difficult to achieve.

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<sup>56</sup> Emphasis in original document

<sup>57</sup> The Alliance for Beverage Cartons and the Environment (2019) ACE's Position on the Modulation of EPR Fees and the Revision of the Packaging and Packaging Waste Directive's (PPWD) Essential Requirements, 5 April 2019

<sup>58</sup> EXPRA (2018) Towards a Common Approach to Modulated Fees, available at [http://www.expra.eu/downloads/eco\\_modulation\\_s\\_13uGU.pdf](http://www.expra.eu/downloads/eco_modulation_s_13uGU.pdf)

<sup>59</sup> Eunomia/COWI (2019) Stakeholder Workshop Report

Indeed, in the context of meeting the 2025 and 2030 recycling targets, design for recyclability incentivised through fee modulation is suggested as a means by which the targets can be achieved in a cost-effective manner, with modulation of fees being described by EPRO as:<sup>60</sup>

*A financial tool to stimulate design for recyclability in order to meet the objectives in an efficient way*

EPRO goes on to highlight the following objectives:<sup>61</sup>

- 1) Reach recycling targets in 2025 and 2030;
- 1) Finance the systems in general, based on a fair system for licence fees;
- 2) Reach the recycling targets as efficiently as possible – design for recyclability is a key strategy

Accordingly, modulation of fees is described by EPRO as:<sup>62</sup>

*A financial tool to stimulate design for recyclability in order to meet the objectives in an efficient way*

This potential role of fee modulation in dealing with issues of both fairness and efficiency is an important one, as it has - in combination with the fee structure - the ability to provide producers with the appropriate price signals in order to achieve the 2025 and 2030 recycling targets in the most equitable and cost-effective manner.

In terms of 'operationalising' the criteria, design for recyclability (DfR) guidelines produced by, or in close discussion with, recyclers provide an appropriate basis for modulation, e.g. those published by Plastics Recyclers Europe (PRE), and the European PET Bottle Platform (EPBP). These guidelines are not generic, but targeted at:<sup>63,64</sup>

- Specific formats (e.g. bottles);
- Made of a specific material (e.g. PET); and
- In some cases based on whether they are clear, or of a specific colour.<sup>65</sup>

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<sup>60</sup> EPRO (2018) European Association of Plastics Recycling & Recovery Organisations: Eco-modulated Fees as a Tool for a Circular Society, Presentation by Peter Sundt at the European Food & Beverage Plastic Packaging Summit, Rotterdam, 28 February 2019

<sup>61</sup> EPRO (2018) Eco-modulated Fees as a Tool for a Circular Society, Presentation by Peter Sundt at the European Food & Beverage Plastic Packaging Summit, Rotterdam, 28 February 2019

<sup>62</sup> EPRO (2018) Eco-modulated Fees as a Tool for a Circular Society, Presentation by Peter Sundt at the European Food & Beverage Plastic Packaging Summit, Rotterdam, 28 February 2019

<sup>63</sup> Available at <http://plasticsrecyclers.eu/downloads>

<sup>64</sup> European PET Bottle Platform (2019) Design Guidelines, available at <https://www.epbp.org/design-guidelines>

<sup>65</sup> The PRE design guidelines for PO pots, tubs and blister trays include colour within the guidelines. Colourless is in the green 'yes' category, light or translucent colours/prints covering no more than 30% of the packaging surface are in the amber 'conditional' category, and opaque colours/prints, and carbon black are in the red 'no' category. See <https://www.plasticsrecyclers.eu/sites/default/files/2018-05/PP%20PE%20Pot%2C%20tub%2C%20blister%20%26%20trays%20guidelines%20v3%2030-11-2017.pdf>

By way of example, Table 6-1 and Table 6-2 present, respectively, EPBP’s summary DfR guidelines for transparent clear/light blue PET bottles, and PRE’s design guidelines for transparent, flexible PE film packaging. The EPBP provides further more detailed information in addition to this summary on their website.<sup>66</sup>

**Table 6-1: EPBP Summary Design Guidelines for Transparent Clear / Light Blue PET Bottles**

	<b><u>YES</u></b>  <b>Full compatibility – materials that passed the testing protocols with no negative impact</b>  <b>OR</b>  <b>materials that have not been tested (yet), but are known to be acceptable in PET recycling</b>	<b><u>CONDITIONAL</u></b>  <b>Limited compatibility – materials that passed the testing protocols if certain conditions are met</b>  <b>OR</b>  <b>materials that have not been tested (yet), but pose a low risk of interfering with PET recycling</b>	<b><u>NO</u></b>  <b>Low compatibility – materials that failed the testing protocols</b>  <b>OR</b>  <b>materials that have not been tested (yet), but pose a high risk of interfering with PET recycling</b>
<b>Material</b>	PET		PLA; PVC; PS; PETG
<b>Size</b>			Smaller than 4cm (when compacted) or larger than 5 litres
<b>Colours</b>	transparent clear; transparent light blue		other transparent colours; opaque; fluorescence; metallic
<b>Barrier</b>	SiOx plasma-coating	carbon plasma-coating; PA multilayer with <5 wt% PA and no tie layers; PGA multilayer ; PTN alloy	PA multilayer with >5 wt% PA or tie layers; monolayer PA blend; EVOH
<b>Additives</b>		UV stabilisers; AA blockers; optical brighteners; oxygen scavengers	bio-/oxo-/photodegradable additives; nanocomposites
<b>Closure Systems</b>	PE; PP; all with density <1 g/cm <sup>3</sup>		materials with density >1 g/cm <sup>3</sup> (e.g. highly filled PE; metals); non-detaching or welded closures
<b>Liners, Seals and Valves</b>	PE; PE+EVA; PP; foamed PET; all with density <1 g/cm <sup>3</sup>	silicone with density <0.95 g/cm <sup>3</sup>	materials with density >1 g/cm <sup>3</sup> (e.g. PVC, silicone, metals)

<sup>66</sup> European PET Bottle Platform (2019) Design Guidelines, available at <https://www.epbp.org/design-guidelines>

<b>Labels</b>	PE; PP; OPP; EPS; foamed PET or foamed PETG; all with density <1 g/cm <sup>3</sup>	lightly metallised labels (density <1 g/cm <sup>3</sup> ); paper	materials with density >1 g/cm <sup>3</sup> (e.g. PVC; PS; PET; PETG; PLA); metallised materials; non-detaching or welded labels
<b>Sleeves</b>	sleeves with partial bottle coverage in PE; PP; OPP; EPS; foamed PET or foamed PETG; LDPET; all with density <1 g/cm <sup>3</sup>	sleeves translucent for IR detection in PE; PP; OPP; EPS; foamed PET or foamed PETG; LDPET; all with density <1 g/cm <sup>3</sup>  (INTERIM: Twin-perforated sleeves for household and personal care)	materials with density >1 g/cm <sup>3</sup> (e.g. PVC; PS; PET; PETG); metallised materials; heavily inked sleeves; full body sleeves
<b>Tamper Evidence Wrap</b>	PE; PP; OPP; EPS; foamed PET or foamed PETG; all with density <1 g/cm <sup>3</sup>		materials with density >1 g/cm <sup>3</sup> (e.g. metal; PVC; PS; PET; PETG); metallised materials
<b>Adhesives</b>	water or alkali soluble in 60-80°C	hot-melts ; pressure-sensitive labels	
<b>Inks</b>	non-toxic; follow EUPIA Guidelines		inks that bleed; toxic or hazardous inks
<b>Direct Printing</b>	laser marked	production or expiry date	any other direct printing
<b>Other Components</b>	base cup, handles or other components which are separated by grinding and float/sink - all with density <1 g/cm <sup>3</sup> ; unpigmented PET		materials with density >1 g/cm <sup>3</sup> (e.g. metal, RFID tags); non-detaching or welded components; coloured PET;

Source: European PET Bottle Platform

**Table 6-2: Plastics Recyclers Europe Summary Design Guidance for PE Transparent Flexible Film**

	<u>YES</u>  <b>Full compatibility – materials that passed the testing protocols with no negative impact</b>  <b>OR</b>  <b>materials that have not been tested (yet), but are known to be acceptable in PE recycling</b>	<u>CONDITIONAL</u>  <b>Limited compatibility – materials that passed the testing protocols if certain conditions are met</b>  <b>OR</b>  <b>materials that have not been tested (yet), but pose a low risk of interfering with PE recycling</b>	<u>NO</u>  <b>Low compatibility – materials that failed the testing protocols</b>  <b>OR</b>  <b>materials that have not been tested (yet), but pose a high risk of interfering with PE recycling</b>
<b>Material</b>	PE-LD; PE-LLD; PE-HD	multilayer PP/PE	any other polymer
<b>Colours</b>	unpigmented; transparent	light or translucent colours	dark colours
<b>Barrier</b>	barrier in the polymer matrix	barrier layer EVOH (in polyolefinic combination film); metalized layers	barrier layer PVC; PA, PVDC; any other barrier layer foaming agents used as expandant chemical agents; aluminium
<b>Additives</b>			additives concentration ≥ 0.97 g/cm <sup>3</sup>
<b>Closure Systems</b>	same material as body	PE on PP body; PP on PE body	any other
<b>Lids</b>	same material as body	PE on PP body; PP on PE body; removable aluminium fasteners	any other
<b>Labels</b>	PE label	PP label; paper label	metalized labels; any other
<b>Adhesives</b>	water soluble (less than 60°C)	hot-melts; pressure-sensitive labels	self-adhesive labels; not water soluble
<b>Inks</b>	No inks	Non-toxic (follow EUPIA Guidelines)	inks that bleed; toxic or hazardous inks
<b>Direct Printing</b>	Laser marked; small production or expiry date	printing covering < 50%	printing covering ≥ 50%

Source: Plastics Recyclers Europe

The ‘traffic light’ approach used in such DfR guidelines lends itself well to determining which types of design would incur a penalty (malus), which would be on the standard fee, and which would be eligible for a bonus. To apply clarity and consistency, and provide a strong steer towards better design for recyclability across the board, it would sensibly follow that packaging items that:

- Achieve a **YES** for *all* relevant aspects are eligible for a bonus;
- Achieve a **YES** in some aspects but achieve a **CONDITIONAL** in *any* aspect will face the standard fee; and

- Achieve a **NO** in any individual aspect are subject to a malus.

A further example of DfR guidance, for paper and board packaging, which could be worked into a similar traffic light approach is the European level “Paper-based packaging recyclability guidelines” recently published by Cefi, Citpa, ACE and FEFCO.<sup>67</sup>

Where there may be merit in all Member States ultimately using the same DfR guidelines as the basis for modulation for specific packaging materials and formats, at present, while there are some differences between available guidelines, these differences are minor.

Indeed a strength of modulating on the basis of DfR guidelines is the extent to which it would lead to a harmonised basis for modulation across all Member States – providing a consistent approach in respect of design. However, given the differences in the collection and sorting infrastructure in Member States, consistent application of DfR guidelines will not necessarily equate to consistent performance in terms of the actual rate at which such packaging items that, for example obtain a **YES** for *all* relevant aspects, will be recycled.

The most important point is that the guidelines used must have been developed by, or in association with, recyclers. If recyclers have not endorsed the DfR guidelines, they should not be used as the basis for modulation. Such guidelines are updated as technology develops, and Member States should thus be sure to use the most recent relevant guidelines. In due course there may be merit in reviewing the extent to which guidelines remain consistent and potentially agreeing on DfR guidelines to be referred to across all schemes.

## 6.2 Recycling Rate

While not explicitly mentioned as a criteria in Article 8a(4)(b), the most logical way in which to measure the recyclability of a packaging format is arguably to refer to its ‘recycling rate’ i.e. the percentage of the total quantity of packaging placed on the market that is actually recycled. Given also the responsibility for meeting the packaging recycling targets, there is merit in understanding, and reflecting through fee modulation, the relative extent to which different packaging formats contribute towards meeting the targets. Using the recycling rate as the modulation criteria also addresses the issue whereby, even where the net costs are better reflected in a more granular fee structure, as described in Section 5.5, there will be some formats that are not recycled at all that may be paying less than those which *are* recycled.

Whilst recycling rates are in many respects the ideal way to measure recyclability, the range and granularity of packaging formats for which recycling rate data are available is

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<sup>67</sup> Cefi, Citpa, ACE and FEFCO (2019) Paper-based packaging recyclability guidelines, available at [http://www.cefi.org/recyclability\\_guidelines](http://www.cefi.org/recyclability_guidelines)

limited at present. This is a point that Expra makes suggesting that such an approach would be problematic.<sup>68</sup>

*First of all, a recycling rate-adjusted fee must be based on solid data on recycling rates, which is not available today for all Member States. Once a package enters a facility (according to EoW), it becomes a waste material among many others and therefore retrieving data on the recycling rate of a specific format is not always feasible. This step should be based on appropriate, real and measurable technical references, and should also take into account the diverse waste management systems across Member States. Importantly, and in accordance with our overarching principle, fee modulation should not result in increased costs for data collection, in addition to all other costs that EPR schemes already face.*

In the future, improved data capture will better enable the recycling rate of individual packaging formats to be monitored. While such high quality data is not yet available Member States should not be dissuaded from starting the journey towards modulating by recycling rate. As an interim measure, periodic surveys of the composition of packaging waste collected and sorted for recycling could be undertaken to obtain an estimate of the recycling rates achieved by different formats.

However, even if, in a specific Member State, data does not currently exist as to the recycling rate by packaging format, there would be a strong incentive for those using formats known to be widely recycled to ensure such data becomes available as soon as possible in order to differentiate themselves from less widely recycled formats. There would in fact be a dynamic incentive – if modulation by recycling rate were to be applied - for those using any format apart from those that aren't recycled at all, to obtain data of the quality required to enable their fee to be adjusted in recognition of their contribution.

In the absence of suitable recycling rate data, an alternative approach to determining the likely recycling rate would be to use a similar methodology to that used by Institute Cyclos-HTP (Institute for Recyclability and Product Responsibility), a German company that specialises in the examination and verification of the extent to which packaging items are likely to be recycled.

For 13 core material types, Cyclos-HTP has developed a standard process chain outlining each stage required to recycle the material (from collection to sorting and reprocessing). The packaging item in question is assigned to a material type, and is then assessed and scored against the technical specifications at each stage (see Figure 6-1 for an overview of the assessment criteria). For example, materials requiring separation by NIR technology are tested for detectability, and scored accordingly:

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<sup>68</sup> Expra (2019) Eunomia's study on fee modulation primary recommendations – Expra's reactions, October 2019

- items receive a score of 0 if considerable labelling or dark colours prevent unambiguous detection;
- a score of between 0.25 and 0.75 if correct identification depends on the position of the item; and
- a score of 1 if unrestricted identifiability is achieved.

Scores for individual stages are multiplied together to reach an overall recyclability score of between 0 and 100.<sup>69</sup>

This type of methodology might be reasonable to apply against a backdrop of a relatively homogenous recycling infrastructure within a Member State. This is not necessarily the case at present, although the direction of travel is clearly towards a higher quality and more consistent approach to collection, sorting and recycling.

It may also be the case that using this methodology (or something similar) to assess the likely recycling rate for each packaging format placed on the market could have relatively high administrative costs, and in principle, the assessment would need to be amended whenever the 'common infrastructure' changed, or whenever modifications were made to packages.

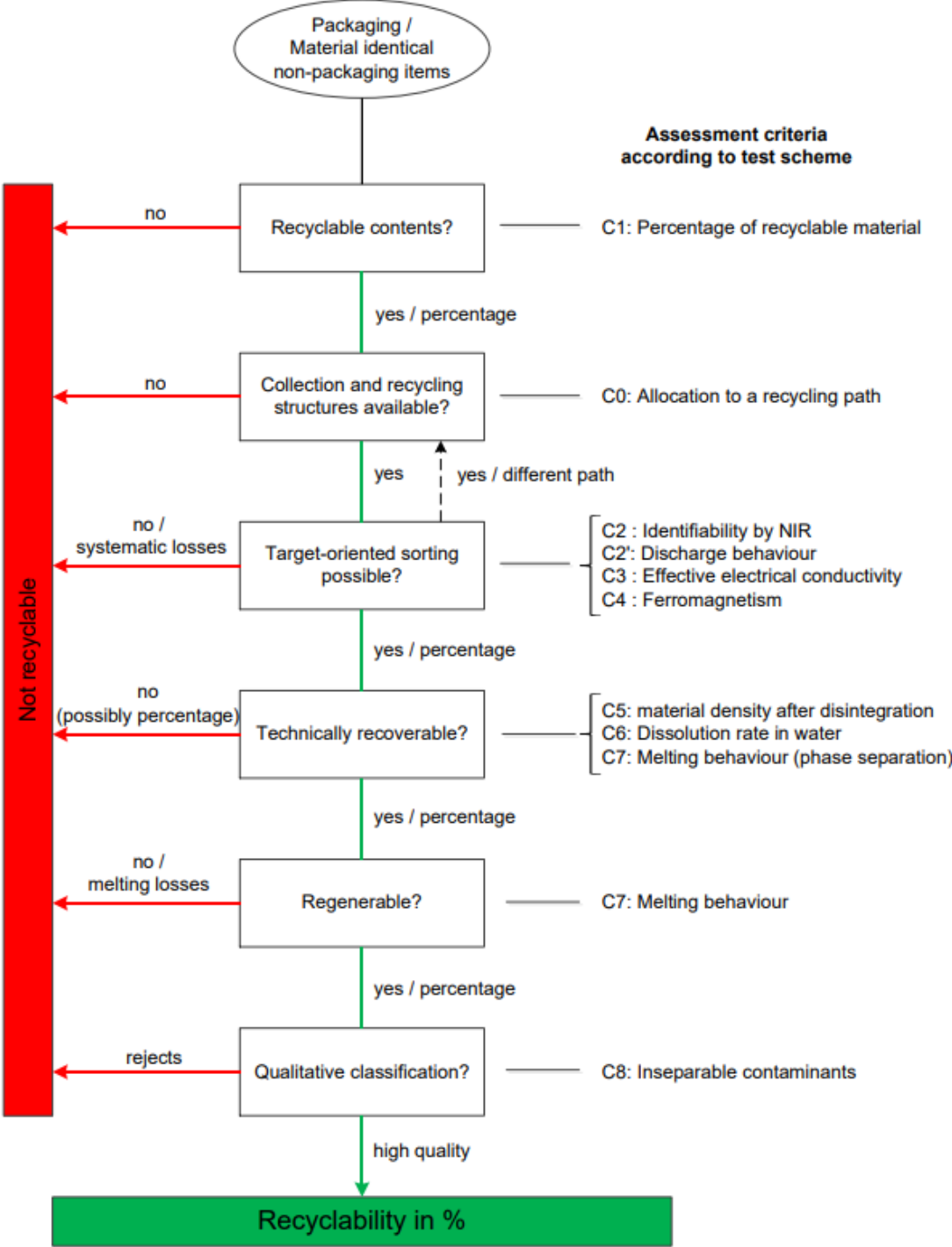
However, such an approach could, for example, also be used to highlight to packaging designers and fillers the design formats, and changes therein, which were likely to be subject to higher and lower fees where the modulation of fees is based on what is actually recycled. Indeed, if the data capture system was improved, then it should be possible to develop a schematic flow chart of where packaging with specific features creates problems for recycling processes.

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<sup>69</sup> Löhle, S., and Institute of Cyclos-HTP (2017) Verification and examination of recyclability



**Figure 6-1: Institute Cyclos-HTP – Flowchart Illustrating Calculation Likely Recycling Rate**



Source: Löhle, S., and Institute of Cyclos-HTP (2017) Verification and examination of recyclability

Modulation of fees would thus be based on the recycling performance of each packaging format, specifically, the distance of recycling rates from the average (across all packaging

types, or for the specific packaging material). Those whose performance is above the average see their payments reduced whilst those whose performance is below the average see their payments increased. The net effect of these modulations, consistent with the constraint of cost coverage (see Section 5.4) is revenue neutral.

### 6.2.1 Accounting for High Quality Recycling

Given that there is considerable interest in ensuring that the recycling process delivers the best environmental outcomes, the quality of material recycled, and the use to which the material is put, is of particular interest. A second tier of modulation may be considered which uses as the basis for modulation, not the average total recycling rate for all packaging, but the average 'high quality' recycling rate achieved. This would give an incentive to ensure more of the packaging which is recycled finds its way into high quality applications.

The approach to defining, and modulating for, 'high quality recycling' would need to be defined and considered. There are a range of possibilities but to simplify matters and limit the contestability of such an approach, it would seem appropriate that high quality recycling be defined relative to the greenhouse gas savings of the commercial use delivering the greatest benefit. For example, high quality recycling for material X could be defined as 'any recycling which delivered 75% or more of the greenhouse gas savings delivered by the most beneficial commercially applied recycling application'.

## 6.3 Reusability

Reusability is explicitly noted in Article 8a(4)(b). However, it is important to recognise the limits of the support that can be provided through explicitly modulating in favour of reusable packaging, and to be aware that other instruments would also be needed to be applied to promote a significant shift.

The criteria of reusability has strong support among some stakeholders, and provokes strong resistance from others.

A paper submitted by a consortium of European NGOs suggests that:<sup>70</sup>

*EPR is a vital policy and economic tool to incentivise more reusable packaging.....  
.....One of the goals of eco-modulation of fees should be to tackle waste upstream  
and make reuse more convenient in accordance with articles 4 and 5 of the Waste  
Framework Directive.....*

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<sup>70</sup> Client Earth, Environmental Investigation Agency (EIA), European Environmental Bureau (EEB), European Environmental Citizens Organisation for Standardisation (ECOS), Friends of the Earth (FoE), ReLoop Platform, Rethink Plastic Alliance (RPA), Zero Waste Europe (ZWE) (2019) Policy proposal - Essential Requirements (ERs) and Extended Producer Responsibility (EPR) fee modulation for packaging to meet the objectives of the European Circular Economy Strategy, Draft Paper, May 2019.

.....*The fee structure within a system must provide sufficient economic incentive. In this case, the differences in fees between options should reflect the waste hierarchy, i.e. the lowest fee offered to reusable packaging, followed by the recyclable...*

By contrast, EUROPEAN argues against reuse as a criteria for fee modulation, noting that:

*There is neither any need to specifically address reuse in the context of EPR fee modulation. There are already incentives built into the EPR schemes for using reusable packaging: producers who use reusable materials commonly report these volumes one-off to the EPR schemes once placed on the market and pay only one-time EPR fees when no longer in reuse.*

In the Czech Republic, the PRO EKO-KOM goes further, and requires no fee for reusable packaging.<sup>71,72</sup>

Reusable packaging in the Czech context is described as follows:<sup>73</sup>

*It is the packaging which executes a specific minimal number of rotations or cycles during its lifecycle; it is re-filled or re-used. That definition is met, for example, by palette, a plastic container, a beer bottle, a gas bottle, etc.*

However, in the case of beer bottles at least it's worth noting that there is a deposit system in the Czech Republic for refillable beer bottles, which is entirely managed by the brewers as a self-contained form of producer responsibility. EKO-KOM would therefore not have any role in managing these items.

Under a collective scheme, reusable packaging should only pay a one-off fee the first time it is placed on the market. This already provides a broad incentive for the use of reusables, while at the same time giving a financial driver for the packaging item to be reused as many times as possible in order to minimise the effective fee per use.

The alternative, of offering a fee set below the net costs of end of life management could provide an incentive – if the fee were lower than for single use alternatives – for those placing on the market items that are actually used only once, to declare themselves to be reusable to obtain a lower fee. This issue would then need to be tackled through the provision of evidence of the number of reuse cycles achieved, increasing data and verification requirements and associated administrative costs.

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<sup>71</sup> EKO-KOM (2019) Remuneration structure for ensuring compliance with the obligation to return and recover packaging waste through EKO-KOM, available at [https://www.ekokom.cz/uploads/attachments/Klienti/Poplatky/EKOKOM\\_fees\\_valid\\_from\\_1\\_1\\_2019.pdf](https://www.ekokom.cz/uploads/attachments/Klienti/Poplatky/EKOKOM_fees_valid_from_1_1_2019.pdf)

<sup>72</sup> With reusable packaging defined as that which meets Paragraph 13, Article 2, of Act No. 477/2001 Coll., as amended by later regulations.

<sup>73</sup> EXPRA (2018) Compliance Contributions Overview 2018, Extended Producer Responsibility Alliance, available at <http://www.expra.eu/uploads/downloads/Overview/Compliance%20contributions%20overview%202018.pdf>

Given the focus on seeking consistency of approach - harmonised to the extent possible - across Member States, and the availability of other policy instruments that can incentivise reuse and other forms of waste prevention (see Section 5.3), it's recommended that rather than applying reusability as an explicit criteria for fee modulation, reusable packaging:

- Should have a separate fee category;
- With fees that cover end of life costs; and
- Are applied only the first time that such items are placed on the market.

In addition, such fees should also be modulated in line with design for recyclability requirements in order to incentivise items to be both readily recyclable as well as reusable.

## 6.4 Recycled Content

Recycled content is not explicitly noted in Article 8a(4)(b). However, to move towards a circular economy for packaging requires a greater uptake of recycled content, and an example of modulation in favour of recycled content already exists in France (see Section 4.1). In addition, the new German Packaging Act (VerpackG) obliges PROs to incentivise the use of recycled content (see Section 4.1).

A number of stakeholders have expressed their support for recycled content to be included as a criteria for fee modulation.

The European Recycling Industries Federation (EuRIC) states in respect of fee modulation that:<sup>74</sup>

*Recycled content is as important as 'durability linked to re-usability, and recyclability' since it enables to truly close the materials' loop and will be even more relevant with the implementation of the SUP Directive setting for the first time recycled content targets.*

Ecopreneur.eu, the European Sustainable Business Federation, argues that there is a need for an economic incentive for companies to use recycled content, stating that:<sup>75</sup>

*In particular, to incentivise recycles from collected packaging going back into packaging we recommend to give the lowest EPR fees (or highest bonuses) to companies with products with post-consumer recycled content.....*

*..... Low fees on the basis of "recyclability", as currently in the Netherlands, are a good start, but by no means the same thing. They stimulate companies to put products on the market that could be recycled. However, it is not an incentive to*

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<sup>74</sup> EuRIC (2019) EuRIC position paper on essential requirements for packaging (With recommendations relevant to the modulation of fees paid to EPR Systems), available at <https://www.euric-aisbl.eu/position-papers/download/542/305/32>

<sup>75</sup> Ecopreneur.eu (2019) Ideas on options for reinforcing the Essential Requirements in EPR, 19.05.2019

*(a) actually recycle it or (b) use recycled content for the product. As a consequence, the minimum requirement of recyclability could have as a result that more companies place products on the market from virgin that could be recycled, are allowed to pay the low fee, but effectively are not recycled at all and hence would not contribute to recycling or the circular economy.*

By contrast, EUROPEAN, for example, argues against:<sup>76</sup>

*Any modulation aimed at other purposes for which EPR schemes are not responsible for or which are not related to operational factors (e.g. modulation based on recycled content as required by the Verpackungsgesetz in Germany). Such other policy objectives not directly linked to EPR responsibilities should be covered through other policy tools.*

Fee modulation does have the potential to assist the move towards greater uptake of recycled content. However, it is not necessarily the most appropriate instrument to stimulate a move away from virgin material towards recycled content. Other instruments such as a materials tax, with different levels for virgin and secondary materials reflecting the respective environmental externalities would be most appropriate, or potentially a fee and rebate system.<sup>77</sup>

A key principle in applying fee modulation, as described in Section 5.2 is that it is better to focus a policy instrument on doing one thing well, than on seeking to achieve multiple objectives. A tension can be created within an EPR scheme if it is seeking to do too many things. A focus on seeking to meet the recycling targets in a way that is cost-effective and fair to different packaging formats gives a clear steer to the way in which an EPR scheme should use fee modulation. However, to also introduce an incentive for recycled content can disrupt the efficient operation of the price signals.

It's important to note that different materials and packaging formats would be more or less amenable to incorporation of recycled content. Accordingly, if an 'across-the-board' incentive were applied through fee modulation, it would be easier for some types of packaging to respond than for others, given, for example, legal restrictions related to food contact packaging. For metals it can be argued that incentives for recycled content in packaging are not required, as sufficient demand already exists – not just in packaging, but in all metal applications.

Given the above, where incentivising recycled content focuses on specific materials and applications, if a bonus is provided for the use of recycled content, given the constraint of cost coverage, the bonus must be funded from elsewhere. If the bonus is funded from

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<sup>76</sup> EUROPEAN (2019) Extended Producer Responsibility: EU Harmonised Principles for National Modulation of EPR Fees for Packaging, May 2019.

<sup>77</sup> Eunomia Research & Consulting Ltd (2018) Demand Recycled: Policy Options for Increasing the Demand for Post-Consumer Recycled Materials, Report for the Resource Association and WWF-UK, 30<sup>th</sup> October 2018, available at <https://www.eunomia.co.uk/reports-tools/demand-recycled-policy-options-for-increasing-the-demand-for-post-consumer-recycled-materials/>

across all the fees, then the costs for *all* producers are higher as a result of seeking to increase recycled content in a specific material/application. If, however, the targeted bonus, for recycled content in, for example, PP is funded by a malus applied to PP without recycled content, then those using virgin PP are effectively penalised (relative to other polymers) because the polymer is amenable to high levels of recycled content.

This raises the wider question of what the EPR scheme is seeking to achieve through incentivising recycled content. With a sole focus on achieving the target recycling rates in a way that is cost-effective and fair, the aim of the EPR scheme is clear. However, there are no overall targets for increased recycled content (apart from in PET beverage bottles under the SUP Directive). The question of where recycled content incentives would be applied, and the size of the incentive, could thus become a focus of contention.

It would thus be better for recycled content to be incentivised through other means, leaving EPR schemes for packaging with a clear focus on achieving the recycling targets in the most appropriate way.

Given the importance of seeking consistency of approach - harmonised to the extent possible - across Member States, the availability of other policy instruments that can incentivise recycled content, and the possibility of a further incentive through modulating for high quality recycling (as mentioned in 6.2.1, and further elaborated in Section 6.5.3) recycled content should not be a criteria to be applied for fee modulation.

## 6.5 Recommendations for Implementation

Given the focus on seeking a harmonised approach, and using fee modulation where it can be most effective, the recommended approach comprises the following:

- A more granular fee structure to better reflect the net costs associated with end-of-life management of packaging formats;
- An immediate focus on the use of Design for Recyclability Guidelines to modulate fees to bring about significantly improved design in the short term; and
- A longer term shift to using the recycling rate as the ultimate criteria for fee modulation.

### 6.5.1 A More Granular Fee Structure

Member States should require a more granular fee structure. This is an important step in moving towards a fairer approach whereby the fees paid better reflect the net costs that the system incurs for managing the specific packaging format, in line with the principle outlined in Section 5.5.

Developing a standard approach, to be applied consistently across all EPR schemes for packaging, will create a harmonised structure with the potential to thus provide more consistent data, helping to tackling issues of free-riding (see Section 11.0), while also serving to reduce reporting burden (see Section 10.3.2).

It was attempted, but not possible, within the context of this study to agree with EPR schemes an ideal standard 'nested' description of base fee categories for packaging.

Developing a standard classification, to be applied consistently across all EPR schemes for packaging, would create a harmonised structure with the potential to thus provide more consistent data, helping to tackling issues of free-riding (see Section 11.0) while also serving to reduce reporting burden (see Section 10.3.2). Such a structure could, conceptually, be as follows:

- Material type (e.g. plastic, aluminium, steel, glass, paper and card, wood)
  - Second level (specific polymer type)
    - Third level (specific format within polymer type)
      - Fourth level (specific colour)

Such a harmonised structure for reporting packaging placed on the market need not necessarily mean that EPR schemes in all Member States set base fees (i.e. fees designed to cover net costs prior to explicit modulation of those fees) at the most detailed level. However, a uniform nested structure would allow each Member State to proceed at its own speed in terms of greater granularity of such fees, while allowing for data to be gathered in consistent categories.

Under the revision of the Essential Requirements it is noted that there is no standard nomenclature for describing and categorising different types/formats of packaging, and that such a categorisation should be developed through a European Standard or other similar means to act as a common reference point. Accordingly, this recommended categorisation process creates an opportunity for a standard fee structure to be developed in tandem.

In the absence of an agreed structure, and in the interest of seeking a harmonised approach, it is instead recommended that EPR schemes should align with the example of Fost Plus, which has gone the furthest in developing a more granular fee structure. The fee categories as shown in Table 6-3 should thus be applied, with separate categories for reusables as required.

**Table 6-3: Recommended Fee Categories for Packaging EPR Schemes**

<b>Materials</b>
<b>Glass</b>
<b>Paper – Carton (≥85%)</b>
<b>Steel - (≥50%)</b>
<b>Aluminium - (≥50% and ≥ 50μ)</b>
<b>PET - Bottles and Flasks - Transparent no colour</b>
<b>PET - Bottles and Flasks -Transparent blue</b>
<b>PET - Bottles and Flasks -Transparent green</b>

<b>HDPE - Bottles and Flasks</b>
<b>Beverage Cartons</b>
<b>PP - Bottles and flasks and other rigid</b>
<b>PS – Rigid packaging except EPS and XPS</b>
<b>HDPE – Rigid packaging other than bottles and flasks</b>
<b>PET – Transparent, other than no colour, blue or green</b>
<b>PET – Rigid packaging other than bottles and flasks, transparent</b>
<b>PET – Bottles and flasks, opaque</b>
<b>PE – films</b>
<b>Other rigid plastics (except EPS, XPS, compostables)</b>
<b>Other films (except compostables)</b>
<b>Complex packaging of which the majority is paper – carton (<math>\leq 85\%</math>)</b>
<b>Aluminium packaging <math>\leq 50\mu</math> composed solely of aluminium</b>
<b>EPS, XPS and compostable plastics</b>
<b>Complex packaging of which the majority is plastic</b>
<b>Plastic/aluminium laminates</b>
<b>Wood, cork, textiles</b>
<b>Complex packaging of which the majority is glass</b>
<b>Complex packaging of which the majority is steel</b>
<b>Ceramics, porcelain</b>

Source: FostPlus

This is the *minimum* level of granularity that should be achieved. Further granularity of fee structure is likely to be desirable in due course, especially as the recycling rate, as described in Section 6.5.3 becomes the predominant criterion for modulation.



## 6.5.2 Modulate with Reference to Design for Recyclability Criteria

Where DfR guidelines produced by or in association with recyclers exist, the packaging within the relevant fee categories should be subject to modulation, such that items that:

- Achieve a **YES** for *all* relevant aspects are eligible for a bonus;
- Achieve a **YES** in some aspects but achieve a **CONDITIONAL** in *any* aspect will face the standard fee; and
- Achieve a **NO** in any individual aspect are subject to a malus

Modulating by recyclability through reference to DfR guidelines should bring about rapid changes in packaging design over a relatively short time period. Reference should be made to the guidance in Section 5.7 on determining the appropriate magnitude of the modulation.

Reducing the variability in packaging design within a specific format through raising standards across the board also facilitates the move to a greater focus on using the recycling rate at the ultimate criteria for fee modulation, as described in Section 6.5.3. All else being equal, the more homogenous the format in terms of its design for recyclability, the more accurately the modulation by recycling rate will reflect the performance of all packaging within the specific format. Accordingly, while there may still be a need for modulating with reference to DfR guidelines once the format specific recycling rate plays a more prominent role in modulation (in such a case, the base fee for the format is modulated by the recycling rate, with further modulation of this base fee with reference to DfR criteria), the need for modulation by DfR will be expected to reduce over time.

## 6.5.3 Modulate by Recycling Rate

Under this approach to modulation, packaging formats for which the recycling rate was above the average in the previous year would benefit from a reduction in their fee and those packages for which the recycling rate was below the average in the previous year would be confronted with fee increases.

Longer term, as improved data becomes available, the recycling rate should become an increasingly important aspect of modulation, and should ultimately become the predominant criteria as more finely-grained information becomes available as to the recycling rate of different formats – and as improvements in design for recycling improve the consistency in respect of recyclability within formats across the board. A start can be made with relatively high-level categories, but it would be expected that those already making better design choices, and for which the recycling rate is correspondingly higher, would push for greater levels of disaggregation over time (to reflect the benefits the system derives from their choices).

A decision would need to be made as to whether modulation should take into account the average recycling rate for all packaging, or the average achieved within a specific material category. Packaging companies are used to schemes setting fees on a material by material basis and so this might be considered the appropriate way forward. Recognising, however, the fact that packaging items made from different materials

compete in the marketplace, and that the system seeks increases in recyclability of all packaging, it might be considered that modulating across all packaging types would be a fairer approach, and one more likely to give rise to greater incentives through modulation.

In this regard it's important to note that materials with a relatively low recycling rate, such as plastic, are affected much more by modulation when this is linked to an 'all materials' recycling rate, whilst the opposite is true for materials with a high recycling rate. If fees were calculated based on a comparison of each packaging type to the recycling rate for that material, the variation presented through modulation, set by the performance of each packaging type relative to others of the same material type would be expected to be lower. Essentially, including all packaging materials increases the range of recycling rates included, and hence, the extent of the fee modulation.

### **6.5.3.1 Incentivising High Quality Recycling**

Given that there is considerable interest in ensuring that the recycling process delivers the best environmental outcomes, the quality of material recycled, and the use to which the material is put, is of particular interest. A second tier of modulation should be considered which uses as the basis for modulation, not the average total recycling rate for all packaging, but the average 'high quality' recycling rate achieved. This would give an incentive to ensure more of the packaging which is recycled finds its way into high quality applications.

The approach to defining, and modulating for 'high quality recycling' would need to be determined. There are a range of possibilities but to simplify matters and limit the contestability of such an approach, it is suggested that high quality recycling be defined relative to the greenhouse gas savings of the commercial use delivering the greatest benefit. For example, high quality recycling for material X could be defined as 'any recycling which delivered 75% or more of the greenhouse gas savings delivered by the most beneficial commercially applied recycling application'.

In the case of modulating for high quality recycling, the question of whether modulation should happen for the average achieved by all materials, or for each material individually is as relevant here as for modulating for 'total recycling rates'. Here, the argument is much stronger for following a material specific route since the use of materials in higher and lower grade applications is a greater problem in some material markets than in others.

Under modulation for high quality recycling, the rationale for investing to improve the quality of outcome is enhanced. In the case of plastics, for example, there would be a stronger motivation for investment in further colour sorting and hot washing of some mixed plastic polymers which might currently end up only in extrusion applications. Such investments might mean that more plastics were used as direct substitutes for virgin polymers, with attendant environmental benefits.

Accordingly, under such an approach, modulation would comprise two elements:

- 1) **Modulation based on the recycling rate:** this is calculated each year and is based on the performance of each packaging format against the average *for all packaging formats*. Those whose performance is above the average see their payments reduced whilst those whose performance is below the average see their payments increased. The net effect of these modulations is revenue neutral; and
- 2) **Further modulation on the high quality recycling rate:** this is calculated each year and is based on the performance of each packaging format against the average 'high quality recycling rate' *for packaging formats made from a given material*. As with the recycling rate element, those whose performance is above the average see their payments reduced: those whose performance is below the average see their payments increased. The net effect of these modulations is revenue neutral.

An illustrative example of the effect this might have on fees in the UK context is provided in Figure 6-2. This is based on a study for Defra, which estimated format-specific recycling rates at the greatest level of granularity possible at present, calculated base fees for each format, and then modelled the recycling rate modulation (termed 'unrecyclability' fees) and the 'high quality recycling' rate modulation element (termed 'beneficial recycling' fees) at a number of different levels. In the example, the recycling rate modulation fee is set at £400 per tonne, and the 'high quality recycling' fee at £150 per tonne.

In the example the high quality recycling fee remains the same across materials, but in practice, it may be preferable to apply this fee only to those materials where the issue of differing 'quality' of uses gives the most concern. This is likely to be the case for glass, plastics, and potentially, wood. It follows that the modulating element for these materials could be as shown, but with material specific beneficial recycling fees set closer to zero for aluminium, steel, and (possibly) paper and card.

Such an approach will incentivise users of packaging with lower recycling rates to seek to reduce the extent of the additional costs implied by the system by increasing the recycling rate of their packages. They might do this by one or more of:

- changing their choice of packaging to formats which are easier to recycle;
- pushing for increased investment in collection, sorting and recycling technologies; or
- moving to different business models (such as those based on reuse / refill).

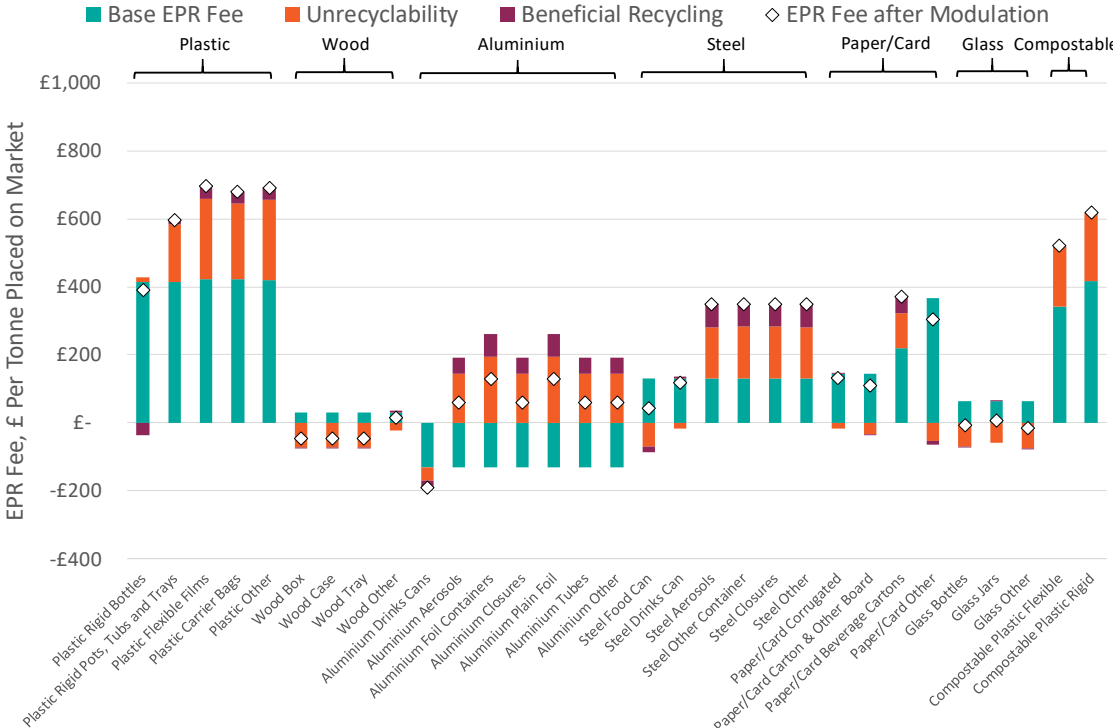
In principle, the average recycling rate will be 'chased upwards' and the extent of modulation implied by a given recycling rate fee can be expected to shrink as the gap narrows between best and worst performing packaging formats.

Each Member State and EPR scheme would need to undertake initial research to identify the appropriate starting point for such fee levels, bearing in mind the importance of providing a sufficient incentive to bring about change, either through packaging design, or investment on collection, sorting and recycling infrastructure. This should take the form of an appraisal, looking ahead over a period of perhaps ten years, to involve

consideration of the extent to which a producer may benefit financially, in present value terms, from increasing the recycling rate of their package through changes to design, or from ensuring that there is appropriate investment in recycling of their packaging.

If the modulated element is set too low, then the scope for a producer to save money on modulated fees through increasing recycling may be limited since the effect of modulation is weak. As the recycling rate fee increases, however, so the scope for savings increases.

**Figure 6-2: Illustrative Example in the UK Context – Recycling Rate (Unrecyclability) Fee @ £400 per Tonne, High Quality (Beneficial) Recycling Fee @ £150 per Tonne**



## 7.0 Criteria for EEE Fee Modulation

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### 7.1 Current and Planned Legislation

In considering the context in which fee modulation will operate, it is important to note current and planned legislation.

The WEEE Directive has a focus on end of life considerations, and Annex VII requires the removal and selective treatment of certain materials, substances and components of separately collected WEEE. The list in the directive includes items that are hazardous or very environmentally damaging, such as capacitors and CFCs, and those that contain high-value and critical raw materials (CRMs), such as printed circuit boards and screens. While not mandatory, the CENELEC standards for WEEE treatment set out appropriate means of achieving these Annex VII objectives and reflect the 'state of the art' treatment as referred to in Article 8 on proper treatment in the WEEE Directive.<sup>78</sup>

The other relevant instruments are the mandatory Eco-design Directive for energy related products (ErPs) and the voluntary EU Ecolabel. Until recently the Eco-design Directive has been focused on energy efficiency, however the Commission has recently adopted EcoDesign implementing regulations, setting out some requirements in respect of reparability for several product groups:

- Refrigerators
- Washing machines
- Dishwashers
- Electronic displays (including televisions)
- Light sources and separate control gears
- Refrigerators with a direct sales function (e.g. fridges in supermarkets, vending machines for cold drinks)
- Welding equipment

The implementing regulations for the above mentioned products state that spare parts (as listed in the measure) have to be replaceable with the use of commonly available tools and without permanent damage to the appliance.

To give one simple example for lighting, luminaires have to have a removable light source. In addition, in order to enhance the repair market, manufacturers have to ensure the availability of repair and professional maintenance information for professional repairers.

- In order to promote reparability, and therefore to increase the lifespan of appliances, the availability of the spare parts (as listed in the measure) over a long period of time after purchase has to be ensured, e.g.:

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<sup>78</sup> CENELEC is the European Standards body for Electrotechnical Equipment

- 7 years minimum for refrigerating appliances (10 years for door gaskets);
- 10 years minimum for household washing-machines and household washer-dryers; and
- 10 years minimum for household dishwashers (7 years for some parts for which access can be restricted to professional repairers).

During that period, the manufacturer shall ensure the delivery of the spare parts within 15 working days.

It is expected that further product groups will be addressed in a similar fashion as implementing regulations are reviewed or new ones developed. Work is in progress regarding ICT products and Ecodesign/ Energy Labelling possibilities, via the ICT Taskforce set up within the European Commission.

Accordingly, given existing and possible future regulation for reparability, modulation according to this criteria would need to take into account that some product groups are already subject to such minimum requirements.

Finally it should be noted that a reparability scoring and labelling system is in the process of development under the lead of JRC which could inform any modulation criteria on reparability, ideally with modulation approaches being aligned with the JRC's scoring system.

## 7.2 Granularity of Fee Categories

Many of the EU WEEE systems already use a reasonably detailed sub-categorisation, often based on the 10 original categories and sub-categories thereof. In the UK, for example, there is a breakdown by 14 product categories and sub-categories with different levels of fees being applied according to the net costs of collection and treatment, taking into account material values. Some schemes have even greater sub-divisions, with Finland having over 30.

This detailed categorisation is appropriate in that the fees should reflect the 'recyclability' of the broad category type – in that they will account for costs of recycling net of material revenues - but it does not reflect the differences between products within the category in respect of eco-design. For example, the typical cost of recycling vacuum cleaners may be reflected through having a sub-category for vacuum cleaners within the category 'small domestic appliances', but this would not help to differentiate between brands, or indeed models, in terms of their reparability, for example, or hazardous substances content.

To drive eco-design therefore requires both a sufficiently fine-level categorisation that minimises cross subsidy between product groups, and additional criteria within product groups to modulate the fees, in order to further drive brand- and model-specific eco-design. The following WEEE categories, as defined in the WEEE Directive, are recommended as a minimum level of granularity for fee structures:

1. Temperature Exchange Equipment
2. Screens and equipment containing large screens (over 100cm<sup>2</sup>)

3. Lamps
4. Large (mainly household) Equipment
5. Small (mainly household) Equipment
6. Small IT and Telecomms Equipment

Over time, there should be a greater granularity of fee structure across schemes, and a move to greater harmonisation of such fee structures and associated reporting requirements.

## 7.3 Potential Criteria for Modulation

### 7.3.1 Eco-labels

Eco-labels offer a useful reference for potential criteria. Those of relevance include EU EcoLabel criteria for televisions (which will be revised in 2020 and be enlarged to encompass all electronic displays), those available through the TCO label for IT equipment<sup>79</sup>, and those from the Green Electronics Council's EPEAT (the Electronic Product Environmental Assessment Tool) criteria.<sup>80</sup> These labels include criteria of relevance around life extension, hazardous substances, material recovery and use of recycled content.

TCO and EPEAT are type 1 eco-labels used by many global manufacturers. TCO Certified is available for office IT products: displays, notebooks, tablets, smartphones, desktops, all-in-one PCs, projectors, headsets, and data centre products: network equipment, data storage products and servers. EPEAT covers computers and displays, mobile phones, TVs, imaging equipment and network servers. A wide range of large brands have TCO and EPEAT certified products and label their products accordingly.

TCO, like the EU EcoLabel, is a pass-fail system, while the labelling system that goes with EPEAT works as follows:

- Bronze-rated products meet all of the required criteria in their category;
- Silver-rated products meet all of the required criteria and at least 50% of the optional criteria; and
- Gold-rated products meet all of the required criteria and at least 75% of the optional criteria.

### 7.3.2 Disassembly and Repair

Ease of disassembly and repair/reassembly is the most appropriate core criteria. This will help to facilitate repair and increase the lifetime of the whole item by enabling replacement of components (and potentially upgrading as well as repairing), while, importantly, also making it easier to recycle at end of life and recover key components for reuse in the process (thereby helping to reduce the need for large inventories of new

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<sup>79</sup> <https://tcocertified.com/tco-certified/>

<sup>80</sup> <https://greenelectronicscouncil.org/epeat-criteria/>

spares that may never be used). This would particularly be the case where high standards are imposed that require actual disassembly as opposed to shredding/fragmentation, which do not necessarily meet Annex VII requirements of the WEEE Directive or CENELEC standards for WEEE treatment.

However, the recent EcoDesign implementing regulations cover several key consumer EEE product groups and include a range of minimum requirements. Consequently, modulation in regard to disassembly and repair would need to:

- Cover a wider range of products than those already addressed (as described in Section 7.1). Disassembly criteria should be appropriate across many products, for example including small appliances, ICT and other types of consumer electronics.
- Cover more explicit disassembly requirements, in particular in terms of access to key components that can become (cannibalised) spare parts, and noting that the term 'without permanent damage' could be open to interpretation; and
- Upgradeability of products, physically and in terms of software.

Short-term recommendations are given further on in this document. However in the medium-term, Member States should look to base modulation in regard to reparability on the repair scoring system in process of development, under the lead of the JRC. Ideally a single set of criteria would be used for modulation under EPR, and for GPP and the EU EcoLabel, where possible.

By way of example, disassembly criteria for Imaging Equipment under EPEAT (from IEEE 1680.2) are defined as follows:

- External enclosures, chassis, and electronic subassemblies shall be removable with commonly available tools or by hand. This shall include:
  - Product shall utilize commonly used fasteners for joining components, subassemblies, chassis and enclosures; an exception shall be provided for special fasteners needed for safety and/or anti-theft reasons.
  - All disassembly for recycling purposes can be done exclusively with commonly available tools or by hand.
  - Access to points of connection and clearance shall be adequate for ease of dismantling of enclosures, chassis, and electronic subassemblies.
  - Non-separable connections (e.g., glued, welded) between different materials shall be avoided unless they are technically or legally required or utilized for safety purposes or in an anti-theft application.
- Electrical and communication wiring and cables that connect to external devices or sources of power or data shall be removable from all products by hand or with commonly available tools (such as a screwdriver) in such a way as to be removed without being cut or in any way rendered unusable, unless required for technical or safety reasons.
- Whole external power supplies shall be removable with commonly available tools or by hand but are not required to be further able to be disassembled.



### 7.3.3 Information for Repairers and Recyclers

Some eco-labels require freely accessible information for those repairing and treating WEEE, however it is worth noting that Article 15 of the WEEE Directive already mandates that Member States require that:

*“... producers provide information free of charge about preparation for re-use and treatment in respect of each type of new EEE placed for the first time on the Union market within one year after the equipment is placed on the market. This information shall identify, as far as it is needed by centres which prepare for re-use and treatment and recycling facilities in order to comply with the provisions of this Directive, the different EEE components and materials, as well as the location of dangerous substances and mixtures in EEE. It shall be made available to centres which prepare for re-use and treatment and recycling facilities by producers of EEE in the form of manuals or by means of electronic media (e.g. CD-ROM, online services)”.*

### 7.3.4 Spare Parts

Spare parts availability and cost is a key issue in terms of life extension. However, as noted in Section 7.1, the recent EcoDesign implementing regulations cover several key consumer EEE product groups and include a range of minimum requirements, including spare parts availability. Consequently, modulation in regard to spare parts for these product groups would need to consider:

- Whether additional spare parts could be added (although the EcoDesign list is already reasonably comprehensive);
- The extent to which the price of spare parts might be considered ‘reasonable’ (of key importance for independent repairers) – while the parts may be available, they may not be commercially viable to use in the context of a repair outside of warranty;
- Faster availability of spare parts than defined by the regulations; and
- Whether digital files for 3D printing should be allowed as an alternative to the availability of certain spare parts.

Industry sources note that the legal requirement is already considered to be strict enough when it comes to quick delivery, especially when it comes to a part required several years after a product is last placed on the market, and quick delivery is costly, since the part should either be readily available stored in multiple warehouse locations across Europe or otherwise would need to be shipped by air.<sup>81</sup> This cost would then have to be included in the spare part price.

On spare part costs the industry also notes that keeping a large inventory of spares is costly and judging ‘reasonable cost’ needs to be done in the context of the particular

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<sup>81</sup> Comments on draft criteria from APPLiA; Home Appliance Europe

product.<sup>82</sup> The cost of spare parts for an entry-level appliance cannot be compared to the cost of spare parts from premium manufacturers. It is worth noting, however, that an increase in the need to keep spares for a longer period than normal would likely drive a greater standardisation of parts, which would in turn reduce costs, as would making available digital files for 3D printing of certain spare parts (increasingly possible even for metal parts).

This 'reasonable cost' of key spares, to use as an eco-modulation criteria, could be defined as a percentage of the original product costs, and established through market surveillance and discussions with the repair sector and Original Equipment Manufacturers (OEMs). It is worth noting, however, that once disassembly, repair and upgrade is incentivised, this will lead to the development of a stock of spare (albeit second hand) parts which should serve to both prevent waste that might be associated with making spare parts just to stock) and reduce costs. In addition, the effect of modulating by warranty period will incentivise a reduction in the need for repair, thus further reducing the stock of spare parts that needs to be held.

### 7.3.5 Durability and Warranty Period

Aside from disassembly and reparability, product durability and reliability are key to circular economy and reuse potential. On durability, fees can be modulated based on the inherent durability of the product where this is clear. For example, in the French system LED lightning receives a 20% discount "owing to the absence of mercury and the long-life cycle".

Otherwise, it would be desirable to modulate according to durability within a product category. The French system uses only the availability of spare parts and information for repairers in relation to durability/life extension, both of which would seem to be relatively weak drivers for durability *per se*. The new implementing regulations under Eco-Design take a similar approach, although as noted above, cost is not considered. The EU Ecolabel criteria for personal, notebook and tablet computers (expired in August 2019) but included considerations around upgrade:

*Personal computers should have facilities that enable the following: Exchangeable and upgradeable memory and graphic cards. Expansion capability: presence of at least four USB interfaces.*

While these approaches are helpful, a more comprehensive approach would reflect the actual tested lifespan of a product. EU legislation already requires this for LED lightbulbs, for example, whereby 90% of any batch of LED light bulbs should last at least 6,000 hours. This would be time consuming (even with accelerated testing) and costly for many EEE producers, however, given the wide range of models on sale.

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<sup>82</sup> Comments on draft criteria from APPLiA; Home Appliance Europe

The length of the free manufacturer's warranty period could, however, be considered a reasonable proxy for durability, and potentially also one reflecting ease of repair. Free extended warranties are only costly if the product is not reliable and/or easy to repair, and hence reflect the producer's confidence in the quality of the product. At present some brands offer long warranty periods to differentiate for commercial advantage but often in a partial way, for example 10 years, on a motor only, for a washing machine. Rewarding a longer free whole product warranty period through a bonus via EPR fees would help to offset the potential extra cost for producers of longer warranties and hence drive up product lifetimes in general.

To strengthen the effect of this approach, this use of warranty period as a proxy for durability in eco-modulation could be combined with mandatory labelling of the warranty (for the whole item, and potentially key components if appropriate) to a set EU standard to avoid any ambiguity and provide a level playing field within a category. In addition it would be helpful, as a price signal to consumers, to also indicate the cost of the appliance per year of free warranty. For example a product costing €200 with a 1 year warranty would be indicated as €200 per year of warranty, while one costing €400 with a 4 year warranty, would be indicated as €100 per year of warranty. This approach would require that consistent market surveillance is undertaken to verify the declarations.

### 7.3.6 Battery Life

Battery life is an extremely important parameter for EEE devices with an integral battery that is not easy to replace by the user since this is a major cause of items being replaced, creating WEEE. It has been suggested that an option here could be to define a minimum number of charge cycles with at least 60% of the charge capacity remaining.<sup>83</sup> This is, however, something that is more appropriately dealt with through revisions to the Batteries Directive.

### 7.3.7 Hazardous Substances

On hazardous substances, many manufacturers go well beyond RoHS requirements through application of prohibited and restricted substance lists, and use this as a point of differentiation. Accordingly, this could be used as a modulation criterion to drive reduced use of hazardous substances to an extent greater than that required under RoHS. The French system picks out all brominated flame retardants in its criteria, and all BFRs and other relevant POPs could be targeted in general given how problematic they are in terms of WEEE plastics recycling.<sup>84</sup>

Discussions with producers suggest that this is seen as a complex undertaking, although such an approach has certainly been used before, for example in the eco-declaration

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<sup>83</sup> Digital Europe Recommendations for the Modulated Fees Guidelines, 15<sup>th</sup> October 2019

<sup>84</sup> While the recast POPs Regulation prohibits various chemicals, DecaBDE, for example, is exempted from prohibition in EEE to which RoHS applies.

labels used for mobile phones (the Eco-rating used by O2 and Vodafone), while EPEAT also includes reduction of hazardous substances in its criteria, for example restriction of the use of:

- beryllium;
- antimony;
- phthalates;
- bromine and chlorine content of plastic materials; and
- substances on the EU REACH Candidate List of SVHCs.

The (now expired) EU Ecolabel criteria for personal, notebook and tablet computers had a similar requirement:

*The product or any part of it does not contain substances identified as substances of very high concern and included in the list foreseen in Article 59 of Regulation (EC) No 1272/2008 nor substances or mixtures meeting the criteria for classification in the hazard classes or categories. Concentration limits for substances meeting criteria or Regulation (EC) No 1907/2006 should not exceed 0,1 % weight by weight.*

The EU Ecolabel criteria for “televisions” (which will be revised in 2020 and enlarged to “electronic displays”) require that:

*Plastic parts heavier than 25 g shall not contain: - flame retardant substances or preparations that are assigned any of the following risk phrases: R45, R46, R50, R51, R52, R53, R60, R61 as defined in Council Directive 67/548/EEC and its amendments. - a list of flame retardants containing organically bound bromine, nor chloroparaffin flame retardants with chain length 10-13 carbon atoms and chlorine content > 50% by weight.*

An approach to this would therefore consider:

- The whole SVHC Candidate List under REACH; or
- A short pragmatic list of hazardous substances used in EEE, based on the most stringent current restricted substance lists of the global OEMs

In addition, going to a lower concentration for existing RoHS restricted substances would be appropriate, although potentially difficult to track at very low concentrations, and less impactful than adding additional chemical restrictions.

### 7.3.8 Recycled Content

On recycled content, the percentage of PCR plastic could be used as a criteria for modulation. In the French system there is a criteria requiring >10% PCR. EPEAT generally requires a minimum PCR content of 5% and options for higher amounts depending on the item and the weight of plastic used in the product. An example is given below:

*Required—Minimum content of postconsumer recycled plastic*

- Product criterion: Any product containing plastic parts whose combined weight exceeds 100g shall contain at least 5g of postconsumer recycled plastic.

- The following may be excluded from the combined weight total: printed circuit boards, labels, cables, connectors, electronic components, optical components, ESD components, EMI components, and bio-based plastic material.
- For products that contain less than 100g of plastic after the exclusions are removed, the manufacturer may declare “Not applicable”.

The (expired) EU Ecolabel criteria for personal, notebook and tablet computers includes the following:

*The external plastic case of the system unit, monitor and keyboard should have a postconsumer recycled content of not less than 10% by mass.*

While recycled content is not mentioned under Article 8a of the WFD, there is a need to drive uptake in a sector where use of secondary plastics is very low, and WEEE plastics are often problematic to recycle and have limited markets, not least due to legacy POPs (e.g. Brominated Flame Retardants).

Any such approach would need to be in the context of wider moves under the EU Plastics Strategy, REACH and POPs Regulation to deal with legacy chemicals and quality issues, and to provide the necessary volumes of materials at a reasonable price.

## 7.4 Recommendations for Implementation

In line with the overarching principles as described in Section 5.0, there are a number of key points to bear in mind in respect of fee modulation for EEE.

- There is a risk of watering down impact and increasing complexity for producers and PROs if different criteria are used in different Member States. Harmonisation of criteria across Member States is therefore very important, and consequently recommendations are made in this document that Member States should follow where possible;
- While the single most important criteria could be considered to be disassembly and reparability, there are a number of other important factors that influence circularity and that are being implemented by the leading brands. These good practices should be rewarded and consequently it is recommended that a small number of criteria are used in combination to determine the bonus, varying to a degree by product group as appropriate;
- It is not strictly necessary to apply modulation to all product categories at the outset – it would be appropriate to focus first on those where the greatest benefit can be achieved and/or the criteria are more easily applied and adherence can be readily demonstrated; and
- Other policy instruments should be considered if potentially more impactful than eco-modulation.

The criteria recommended in the sections below combine Circular Economy objectives around durability/reliability, repair, upgrade, and end of life disassembly for recycling:

- **Disassembly, repair and upgrade** is a key priority since it cuts across various aspects of CE, including recyclability. Hence Member States should modulate on this aspect, where minimum EcoDesign requirements do not already exist through Implementing Regulations, in which case the other criteria need to take precedence.
- **Spare parts availability** – easy availability of spare parts that are economically viable to use in a repair scenario, is also critical, although the need to determine a ‘reasonable’ cost in this regard is problematic. It is recommended, however, that the availability of free digital files for 3D printable spares, is used as a criteria as this helps to overcome the potential barrier to using spare parts outside of warranty. The availability of physical spares, where minimum EcoDesign requirements do not already exist through Implementing Regulations, should also be used as a criteria.
- **Extended warranty** - this criteria combines well with that of disassembly, repair and upgrade, and acts (as a proxy) to support the Circular Economy objective of durability/reliability. While there is to a certain extent a commercial driver for offering longer warranties in some case, this would increase the attractiveness of such approaches, with a bonus helping to offset any additional cost for producers.
- **Removal of hazardous substance**, beyond that currently mandated under RoHS and other regulations.
- **Recycled content in plastic parts** - an important consideration in a circular economy to better drive markets for waste plastics.

The last of these could be incentivised through taxation (e.g. on primary polymers in general or on EEE items with less than 10% PCR in plastics), and this option should be explored by Member States to determine whether this would be

- a) possible/politically acceptable; and
- b) more cost-effective and impactful than incentivising through modulation.

These criteria are explained further in the following sections.

#### 7.4.1 Disassembly, Repair and Upgrade

For products not yet covered under the aforementioned Implementing Regulations under Eco-Design, the following criteria should be applied:

- Disassembly and reassembly for repair – namely that, to obtain a bonus the product should:<sup>85</sup>

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<sup>85</sup> Where more detailed definitions are required the use of existing and well developed and tested criteria, such as from EPEAT (e.g. for ICT products), EU or national eco-labels, should be utilised to help simplify data gathering and compliance for producers.

- Allow key spare parts (to be defined) to be replaced with the use of commonly available tools and without permanent damage to the appliance, by repair professionals (either authorised by the OEM /retailer or independent).

In particular it is recommended that this criteria is applied to ICT equipment in the short term, given the large quantities and carbon impact of such products, in the absence of implementing regulations. These criteria could be amended as necessary following any introduction of minimum requirements and/or reparability labelling.

In addition, it is recommended that for ICT products to obtain a bonus:

- Product upgrade should be possible, including as necessary to the device memory, and all chips and cards, with the use of commonly available tools and without permanent damage to the appliance, by repair professionals (either authorised by the OEM /retailer or fully independent); and
- That compatible software updates, essential for the basic use of the device, should be applied automatically and free of charge, with the consent of the user; and
- For ICT equipment and large household appliances, that a bonus is also considered for self-diagnostic software (that flags an issue and the necessary response) and/or external technical support (by internet and telephone) that allows consumers to troubleshoot and soft-fix minor problems.

#### 7.4.2 Spare Parts Availability and Cost

As noted above, digital files for the 3D printing of spares, where appropriate (e.g. excluding complex multi-component items with moving parts, such as washing machine bearings), should, to obtain a bonus, be available free of charge.

For products not yet covered under the aforementioned eco-design implementing regulations, essential physical spares (to be defined by the MS under each product category), should also be made available for at least five years after the final date of placing on the market in that country.

Member States could also consider whether it is viable to give a bonus where the cost of spare parts are deemed 'reasonable' in the context of the original cost of the new product (i.e. as a percentage). However, determining what constitutes 'reasonable' will require further engagement and investigation, so is not a short-term focus.

#### 7.4.3 Extended Warranty

A free extended warranty from the producer would help to drive more durable and reliable products and a bonus could be applied based on:

- The length of the whole product warranty offered by the producer, free of charge with the product, and without prejudice to existing statutory rights under EU and national consumer protection law.
- This should be an absolute minimum of 2 years, and could be varied by product group up to 5 years.

Ideally this approach to modulation would be combined with clear mandatory labelling, at the EU level, for display clearly at the point of sale, including the length of the free warranty and the cost of the product, divided by the length of the free warranty to give a very tangible 'cost per year of protected life' for consumers.

#### 7.4.4 Hazardous Substance Restrictions

To incentivise the elimination of hazardous substances beyond those already restricted by RoHS, and other EU/international mandated prohibitions and restrictions, a bonus could be applied in regard to products which (as appropriate):

- Exclude (to a level of 1000 ppm in a homogenous material >25g in weight, unless otherwise specified) a short pragmatic list of hazardous substances used in EEE, based on the most stringent current restricted substance lists of the global OEMs, and in particular:
  - chlorine and bromine content of plastic materials;
  - beryllium and compounds;
  - antimony trioxide;
  - arsenic (50ppm), e.g. as in display screen glass;
  - phthalates on the SVHC candidate list; and
  - PVC.
- or, more comprehensively;
- Exclude the whole SVHC Candidate List under REACH (to a level of 1000 ppm in a homogenous material >25g in weight).

#### 7.4.5 Post-consumer Recycled Plastic Content

Driving use of PCR content is crucial in the circular economy. A bonus could be applied where there is a minimum of 10% PCR in plastic parts over 25g, and could be potentially increased to 20% or more for some product groups where the aesthetics of plastic parts are less significant.

A further bonus could be applied to the use of post-consumer recycled CRMs, including rare earths, in electronic components.

#### 7.4.6 Using the Criteria in Combination, by Key Product Groups

It is recommended that criteria are used in combination and vary by product group. This could work in a similar fashion to the French system to encourage the uptake of several inter-related practices and hence not allowing dilution of impact (e.g. through one bonus balancing out a malus). As an alternative, allowing greater flexibility and a slightly lower level of attainment, two bonus levels could be applied for a combination, as illustrated below for some key product groups:

ICT equipment (not yet covered by reparability criteria under Eco-Design):

**Bonus:**



- Disassembly / reparability and
- Upgradeability (of parts/software) and
- Spare parts availability/free 3D files and
- Reduced hazardous substances

Or, if scoring, Bonus Level 1 = 3 out of 4 criteria met, Level 2 = 4 out of 4 criteria met

**Malus:** Any one of the above is missing

Or, if scoring, two or more of the above are missing

(Non-ICT) consumer electronics and displays (reparability criteria covered under Eco-Design)

**Bonus:**

- Upgradeability (of parts/software) and
- Free 3D printing files for spares and
- Free extended warranty for the whole machine and
- Hazardous substances

Or, if scoring, Bonus Level 1 = 3 out of 4 criteria met, Level 2 = 4 out of 4 criteria met

**Malus:** Any one of the above is missing

Or, if scoring, two or more of the above are missing

Appliances and equipment (reparability criteria covered under Eco-Design)

Where the reparability criteria are covered by the existing minimum requirements under Eco-Design, the criteria could be used as follows:

- Free 3D printing files for spares and
- Free extended warranty for the whole machine and
- Hazardous substances and
- PCR content

Or, if scoring, Bonus Level 1 = 3 out of 4 criteria met, Level 2 = 4 out of 4 criteria met

**Malus:** Any one of the above is missing

Or, if scoring, two or more of the above are missing

Other appliances and equipment (not yet covered by reparability criteria under Eco-Design)

**Bonus:**

- Disassembly / reparability and
- Spare parts availability/free 3D files and

- Hazardous substances and
- PCR content

Or, if scoring, Bonus Level 1 = 3 out of 4 criteria met, Level 2 = 4 out of 4 criteria met

**Malus:** Any one of the above is missing

Or, if scoring, two or more of the above are missing

It should be noted that products with an eco-label award, for example the EU Eco-label for Televisions, TCO certified IT products or EPEAT gold award products (computers, mobile phones, TVs, imaging equipment and network servers) or national and regional labels (e.g. Blue Angel or Nordic Swan) could also be considered for a bonus where meeting or exceeding the criteria otherwise used to allow a bonus.

It is important that these awards should not be used as the sole means of obtaining a bonus or determining a malus since these awards are often quite onerous to achieve and hence not necessarily available to SMEs.

#### 7.4.7 Determining the Magnitude of the Modulation

In the French modulation system, in absolute terms, the differences in the fee between +20% and minus 20% (on the VAT added figure) is small; for example €3.60 for a fridge freezer (which may typically cost €400 or more), and just €0.2 for a vacuum cleaner (which may typically cost over €60), hence less than 1% difference on the actual product cost. The mobile phone is the only product group in the French modulation system that has a 100% malus charge for 'poor' eco-design. In this instance the +/- 100% is still only €0.02 due to the very low basic compliance fee for the mobile phone category (as there is a lot of reuse), hence the need for more than +/-20% modulation to provide any impact.

The French authorities therefore believe that this approach to modulation has very little impact on consumer choice and, since the fee gets paid for the producer by the consumer in their visible fee system, the current system provides very little incentive for the producers to modify their designs.<sup>86</sup>

The 'visible fee', while small in terms of the difference in the product price, is seen as a useful tool in that:

- 1) It makes the EPR fee transparent to all, which is good for producers in terms of being able to see the fees charged by all PROs, although arguably bad in the sense that this can lead to a 'race to bottom' in terms of competing PROs constantly trimming costs to encourage more producers to switch schemes;

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<sup>86</sup> Discussion with the French Ministry of Environment, June 2019

- 2) It indicates the legitimacy of the seller, hence helping to reduce free-riding (although this could of course be potentially faked if the seller was aware of the obligations); and
- 3) It makes a connection in the consumer's mind with the end-of-life issue. The fact that they know that they have paid towards the recycling process could have an impact on their willingness to seek out a recycling option rather than place it in the residual waste.

The visible fee can be used with an eco-modulation varying the fee for a particular producer with a particular PRO, and in fact this happens already in France. However this is problematic since it guarantees that consumers will pay the fee, whatever the modulation. The experience in France is that the small amount of bonus or malus in relation to the product cost means that, while 'visible', is unlikely to affect the consumer's choice and hence will have no impact on the product's market share. Consequently there is no reason for the manufacturer to change its design.

Unlike the visible fee, that comes to the PRO from the retailer, direct producer charges appear on the producers' bottom line and hence are far more likely to have a more significant impact on decision making. While producers would wish to pass on this fee to the consumers, this depends on market conditions. Margins on TVs, for example, are very tight in the EU and the largest retailers can pressurise producers not to increase product costs, hence making it less likely that the EPR fees are passed through to consumers.

It is therefore to be noted that:

- Where fees are paid directly the modulation factors can be small (as a percentage of the product price), since when applied to large brands across millions of items sold in the EU, the differences will still be impactful and hence are more likely to drive better eco-design; whilst
- Where 'visible fees' are used, there is the necessity to use larger modulation factors to have an impact on consumer choices, i.e. to affect the cost of the product in a meaningful way (e.g. at least 10%, which would be in line with minimum sales discounting to have an impact on consumers).

The modulation amount could be calculated based on discussions with the producers / brand owner to understand the relative cost of making the product more eco-friendly in line with the criteria.

Finally it should be noted that a visible fee could potentially be replaced by some sort of green product rating to provide the functions noted above (i.e. raise consumer awareness), and perhaps displayed on the current Energy Label (so as to avoid a further label). This could perhaps be done using a bronze, silver, gold rating (as used by EPEAT) to reflect the eco-modulation score in a non-financial sense. As with the energy label, a qualitative label (A to G in that case), the suggestion is that this may have more effect than indicating the actual financial saving involved, which is generally minimal as noted above.

## 7.4.8 Compatibility with Competitive Schemes

Fee modulation according to eco-design characteristics is relatively straightforward where there is a single scheme or clear PRO subdivisions by WEEE category. However it is potentially more complicated where there are competitive schemes working to allocated targets/amounts that they physically need to arrange collection for so as to meet their members' obligations.

In this instance, the size of the fee modulation (bonus and malus) would be set in absolute terms by a central Member State authority, and competing schemes would have to apply these as required, but would still be free to compete on price and service. This would be done in a bottom-up manner - each producer submitting its criteria data which would be turned into a fee modulation factor by the central body. It should be noted also that the market composition and hence the extent of bonus and malus factors need to be known in advance of the modulated fees being set for that year, and hence data would need to be provided a few months before, in an annual cycle for example.

There is concern from some PROs, that, depending on the mix of producers each PRO has, and the eco-design features of the products in the portfolio of each producer, a modulated fee could result in a deficit or excess of funding for a PRO compared to the no-modulation scenario. The PRO will still, however, generally have to deal with the same mixed WEEE from collection points, not just the WEEE of its own producers. In this case there may be a need (on a dynamic basis) to compensate the underfunded PRO for the difference between the fees it gets and those necessary to undertake collection and treatment of the mixed WEEE, potentially taking this money from the PRO that has an excess. This could be achieved through redistribution via a central authority/clearing house.

With a fee modulation there is also a risk that if the net balance of modulations overall is in favour of a 'bonus' (as a result perhaps of criteria that are too easy to achieve), there won't be enough money overall across all of the PROs to meet the required costs. If there is a greater proportion of products obtaining a bonus than expected, and fewer incurring a malus, an increased malus factor would need to be applied to those products, creating a greater incentive to improve. Flexibility in the malus magnitude may therefore be needed to balance the bonus effectively overall.

Conversely, but less problematic, a net balance in favour of a 'malus' could create a surplus of fees, although this could be capped at a certain level (and fed into a general fund, for example to support national communications) or factored down across all PROs to correct the surplus effect.

Another option is a 'malus only' approach, whereby the surplus is distributed between the bonus producers according to their particular eco-modulation scores.

### 7.4.8.1 Obligation Modulation

An entirely alternative approach, which has received considerable support from WEEE Forum members and some producers, is instead to modulate the amount / quantity of

WEEE that each PRO needs to collect. In this instance, the resulting modulation factor would be applied to the producer's market share of placed-on-market (POM) tonnage and the individual producer tonnages would then be aggregated to set the PRO obligation.

A PRO with 'good' producers i.e. with producers that have designed their products in a way that facilitates reuse, repair, dismantling and recycling would have less to collect and hence lower costs overall. Producers would be charged based on their reduced tonnage obligation according to their individual modulation score.

As an example, consider only fridges and just two PROs competing in the market (with a few producers each), with an overall POM figure of 1,000t. Producer A2 has a range of products which overall have good eco-design features and at the beginning of a new year gets from the authorities a "POM modulation coefficient" of 0.8. Producer B3 has some poor design features across its range on balance, and gets a POM modulation coefficient of 1.2. The situation would then be as follows:

- PRO A adjusted POM:
  - Producer A1: POM of fridges = 100t
  - Producer A2: POM of fridges = 300t x 0.8 = 240t
- PRO B adjusted POM:
  - Producer B1: POM of fridges = 50t
  - Producer B2: POM of fridges = 150t
  - Producer B3: POM of fridges = 400t x 1.2 = 480t
- TOTAL adjusted POM of fridges = 1020t
- MARKET SHARES in fridge sector:
  - PRO A = 340/1020 = 33.3%
  - PRO B = 680/1020 = 66.7%
- Target quantity of WEEE (Fridges) under Member State target is (say) 50% = 500t
- Therefore the two PRO allocations are:
  - PRO A = 500 x 0.333 = 167t (reduced from 200t with no-modulation)
  - PRO B = 500 x 0.667 = 334t (increased from 300t with no modulation)

PRO A can reduce the fees to Producer A2 (the fees of Producer A1 do not change) and PRO B has to increase the fees to Producer B3.

The likely scale and speed of any shift between malus and bonus categories (post design changes or phasing out of certain models), once the modulation is implemented, clearly results in a very dynamic situation and regular updates would be required.

#### 7.4.8.2 Concerns over Balancing Mechanisms

There is concern in some industry quarters that using a balancing approach between PROs competing on the same territory could create significant opportunities for fraud in some member states. This is because there would be an incentive for a PRO to encourage its members to declare more "bonus" products and fewer "malus" products, irrespective of the real balance of products placed on the market. Consequently there would be the need to have a high level of market surveillance and enforcement around

such a system, with a central body / clearing house having full visibility of the POM and modulation factors. It is worth noting that schemes with a single PRO do not have any such complications.

## 8.0 Criteria for Batteries Fee Modulation

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### 8.1 Current and Planned Regulation

In considering the context in which fee modulation will operate, it is important to note current and planned legislation.

In terms of recycling, the Batteries and Accumulators Directive (2006) requires the following:

- a 45% collection rate for waste portable batteries;
- a prohibition on the disposal by landfill or incineration of waste industrial and automotive batteries, in effect meaning that all batteries (that are available for collection) should be sent for recycling; and
- the setting of recycling efficiencies to ensure that a high proportion of the weight of waste batteries is recycled (65% of lead acid batteries, 75% of nickel-cadmium batteries and 50% of other waste batteries).

From an EPR scheme perspective, the collection and treatment focus is on portable batteries since there is a target for these, and the automotive and industrial batteries have been largely lead-acid and have inherent net-value that drove the market to close to 100% collection and recycling rates. Fees, other than administrative fees, are only charged by EPR schemes for portable batteries. This situation may need to change in response to a wider range of batteries needing collection from household sources, such as larger (non-portable) e-mobility and cordless appliance batteries.

The Directive targets are broad ones and do not (at present) get into the specifics of sub-categories, and can effectively allow cross-subsidy from one set of battery chemistries to another. The Commission has now completed the evaluation of the Batteries Directive, published on the 9th of April 2019. The evaluation is part of a process that could lead to the Directive's revision.

A Preparatory Study in regard to a possible Eco-Design Directive for Industrial and Automotive Batteries is also being developed. This is considering minimum requirements for industrial/automotive battery performance and sustainability which can potentially help to guide criteria for eco-modulation in these products. The criteria discussed in the Preparatory Study as being used for eco-design minimum requirements for industrial/automotive batteries are as follows:

- Performance minimum requirements under consideration:
  - Minimum battery pack/system life time

- Maximum auxiliary power consumption of the Battery Management System
- Sustainability minimum requirements under consideration:
  - Partial Open Battery Management - e.g. information on remaining capacity
  - Carbon footprint in manufacture
  - Battery information – e.g. regarding hazardous substances
  - Battery pack design – e.g. regarding disassembly / recyclability

The likelihood of an eco-design directive for batteries is as yet unclear, but it is important to note that any modulation factors would need to go beyond any mandatory minimum requirements set for batteries.

## 8.2 Granularity of Fee Structure

The following baseline cost categorisation is used, based on the chemistries/type within the portable battery category (for primary and secondary rechargeable batteries):

### Primary

- Alkaline
- Zinc-carbon
- Zinc-chloride
- Lithium metal
- Button cell
- Other

### Rechargeable (secondary accumulators)

- Lithium
- Nickel metal hydride
- Lead-based
- Nickel cadmium
- Other

The baseline fees should reflect the actual net costs of collecting and recycling a particular type/chemistry where possible, i.e. where costs can be meaningfully differentiated, and hence to reduce the risk of cross-subsidy within portable batteries.

In addition to the baseline fees noted above, it is recommended that eco-modulation factors are applied to portable batteries. At present the scope for fee modulation is only for portable batteries as these are covered by collective schemes, although developments in e-mobility and cordless tools and appliances (in particular where non-portable batteries may arise more frequently in the home) may mean that there is a future need to address industrial and automotive batteries in regard to collection and recycling targets.

## 8.3 Potential Modulation Criteria

### 8.3.1 Rechargeability

Rechargeability is straightforward to verify and binary in terms of the way which the battery is advertised and sold. Portable rechargeable batteries can replace many single-use batteries, many of which are not being captured in separate battery collections and disposed of in residual waste for incineration or landfill.

Recent LCA work shows that when compared to disposable primary batteries, the use of rechargeable batteries gives a distinct environmental advantage for high consumption devices such as cameras, torches, and electronic toys, so long as there are around 50 recharge cycles.<sup>87</sup> It is worth noting that rechargeable batteries can be recharged hundreds of times (the exact figure is debatable, but a conservative estimate would be 200), although their charge capacity diminishes over time.<sup>88</sup> It is recommended that NiCd batteries should not be promoted due to their poor charge retention and hazardous content. Newer rechargeable batteries (e.g. NiMH and Lithium ion) have greater capacity overall and far lower 'leakage' of charge and are well suited to high power-demand applications.

Rechargeable batteries often cost four to five times the price of Alkaline equivalents, and hence (in the absence of a tax on single use batteries) there is a need to nudge consumer choice through the application of significant bonus and malus charges.

### 8.3.2 Recycled Content

Recycled content has been incorporated for a significant period of time by Energizer in several of its portable replacement batteries (e.g. AA), although it is understood that this is no-longer the case due to production difficulties. Despite this it seems necessary to try to encourage the use of recycled content in batteries through eco-modulation so as to help incentivise further developments in this area. Recycled content would include all materials recycled in a closed loop, back from used battery recycling.

### 8.3.3 Charge Capacity and Battery Lifetime

Charge capacity (mAh) for portable batteries could be considered a useful indicator of longevity, particularly for primary batteries. Charge capacity is only shown at present on portable rechargeable batteries but the concept also applies to primary (single-use) batteries and the EU Parliament would like to see capacity shown on these primary batteries to support consumer choice.

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<sup>87</sup> Dolci G, Tua C, Grosso M, Rigamonti L (2016) Life cycle assessment of consumption choices: a comparison between disposable and rechargeable household batteries

<sup>88</sup> a rechargeable (NiMH) battery can be recharged at least 400 times – see <https://www.duracell.co.uk/product/ultra-rechargeable-ultra-aa/>)



The industry (i.e. the EPBA) notes that measured capacity is highly dependent on test conditions including the duty cycle (how many amps are being drawn) and cut-off voltage, however standard test conditions could be developed (under CEN) and applied (as for mandatory rechargeable labelling) and banding used to reflect inaccuracies; e.g. <1000 mAh, 1000 to 2000 mAh and >2000 mAh.

A simpler approach, as set out in French legislation, would be to impose a malus on zinc carbon primary batteries given that they have a far shorter lifespan than alkaline batteries. Primary zinc-carbon (dry cell) AA batteries have around 400–900 mAh capacity and are usually marketed as "general purpose" batteries. Zinc-chloride batteries store around 1,000 to 1,500 mAh and are often sold as "heavy duty". Alkaline batteries cost more than zinc-chloride batteries but hold additional charge; typically from 1,700 mAh to 2,850 mAh and do generally last longer in heavy duty applications. A malus could therefore justifiably be imposed on zinc carbon and zinc chloride relative to alkaline batteries.

A similar approach could be used for e-mobility batteries (were these to be in scope) but in regards to energy density, specific energy storage by weight, which is defined as MJ/kg (or Wh/kg), given the lack of any specific size to help define capacity as such. The recent Preparatory Study considered energy density as a performance measure but decided that:

*“Because it is already an important design parameter for e-mobility and there is no evidence that setting a minimum requirement will be useful to influence the market.”*

The Preparatory Study also suggests that a ‘lifetime criteria’ could be defined that takes into account, for a rechargeable battery, the full life time, across numerous charge cycles managed by the batteries power management system. This could be assessed under an agreed CE test standard, although at present no such test exists.

#### **8.3.4 Collection Rate**

Collection rates for certain types of portable batteries, including large and heavy lithium-ion and NiMH batteries used in some e-mobility applications and cordless appliances, are low in many Member States, in part due to the inconvenience of taking such batteries to collection points. There is, however, a need to ensure that critical raw materials used in batteries, including lithium and zinc for example, are recovered to as high a degree as possible to further circular economy objectives. By applying a higher charge for batteries that have a low collection rate there is an incentive for producers to either move away from that type of battery or for the PROs in question to support improved collection of those items to reduce charges for their members. There is the risk however that this largely applies to the use of Li and NiMH batteries for which increased market share is desirable. There is also a concern that the required data, at the level of disaggregation required (by chemistry), may not currently be available, albeit data can be expected to improve over time if this were incentivized.

### 8.3.5 Recycling Rate and Recyclability

While Li-ion collection levels are low in the EU at present, and reprocessing capacity limited, the waste levels are expected to grow quickly. High performance Li-ion batteries require the use of some rare metals with a limited supply and often from sensitive environments or involving conflict zones. It is therefore necessary to establish take back and recycling systems, so that this source of secondary raw materials becomes available in Europe. More generally there is a need to ensure that other minerals used in batteries, including zinc for example, are recovered to as high a degree as possible to further circular economy objectives.

At present there is a broad target to recover 50% of the material where recycling portable batteries. Modulating to reflect the recycling rate by battery type/chemistry, especially in regard to the recovery of CRMs, would seem desirable but would be complex as the recycling process varies from one reprocessor to another and the relevant data, by battery chemistry, is not readily available. It would therefore be preferable to impose minimum recycling rates for certain materials under other instruments (e.g. a revision to the Batteries Directive).

An alternative would be to use a recyclability index, for industrial / automotive batteries at least, as discussed under the recent Preparatory Study for EcoDesign minimum requirements.

## 8.4 Recommendations for Implementation

In view of the various issues noted in the section above, and in line with the principal of keeping the criteria as simple as possible and to address key circularity issues, the following two criteria are recommended to determine eco-modulation factors:

- 1) Rechargeability (yes or no) where there are single use as well as rechargeable options, but excluding NiCd. The priority here should be AA (LR6), AAA (LR3), C (LR14), D (LR20) and 9v rectangular section batteries. A bonus should be applied to all rechargeable options, but excluding NiCd, and a malus to all single use batteries; and
- 2) Percentage recycled content in the battery product from closed loop battery recycling (all materials). A bonus should be applied to all batteries that include recycled content, a malus where no recycled content is used. This could be done as a banded measure, for example:
  - 0% PCR content malus
  - 4% or higher bonus level 1
  - 4% to 8% bonus level 2
  - >8% bonus level 3

In both cases, a tax would theoretically be preferable. However, in the absence of other criteria that clearly lend themselves to modulation in the case of batteries, it is recommended that schemes modulate according to the above two criteria.

In addition, it is recommended that a malus is applied to zinc-carbon and zinc-chloride primary batteries due to their low capacity and lifespan relative to alkaline primary batteries. While a ban, at the EU level, would be simpler, in the absence of a ban it is an appropriate further criteria for modulation.

#### 8.4.1 Magnitude of the Modulation

With batteries, the objective of eco-modulation may be both to influence consumer choice (e.g. to encourage greater use of rechargeables and to select batteries with recycled content) and/or producers in regard to the more detailed aspects of battery design (e.g. to design for inclusion of recycled content).

While small fees across many millions of units can have a significant impact on the producer, they need to be more significant, as a percentage of the products' costs, to have a significant impact on consumer choice when buying just a few units at a time. The French experience is that the very small fee variations applied to date have had relatively little impact.<sup>89</sup> Consequently it is recommended that, where the objective is to influence consumer choice, a bonus or malus should be applied that is a very significant proportion of the average cost of that battery type, for example +/-20% of the retail cost, rather than 20% of a relatively small collection and recycling charge.

In particular it is necessary to have a large malus for single use batteries and/or a bonus for rechargeable portable batteries to make any impact on what is a currently very large cost gap; rechargeable AAs (LR6) for example often costing 4 or 5 times the price in upfront costs.

It is important that associated consumer information is provided that sets out the appropriate applications for the different types of portable batteries so that inappropriate choices aren't made. For example, the use of a low capacity battery in a heavy-duty application will result in more waste, while the use of rechargeable battery for an inappropriate one (e.g. to drive a camera flash), could also lead to poor performance and higher levels of waste. The EPBA can provide such information to Member States for presentation on battery sales stands or via QR codes for example.

It is also important to note that, while there is currently no visible fee option for batteries under the Directive (unlike WEEE), the application of a visible fee can be helpful in raising consumer awareness and improving collection via retailers (as discussed in the WEEE section above). While a visible fee can still reflect modulation factors, the price differential may not be noticed. As discussed above for WEEE, a traffic light labelling system, that reflects eco-modulation factors, could be used on sales display stands, potentially integrated with the EPBA information on applications noted above.

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<sup>89</sup> Corepile (2018) *Eco-modulation du barème pour la Filière Piles & Accumulateurs* - PDF, accessed 27 June 2019, <https://docplayer.fr/19951818-Eco-modulation-du-bareme-pour-la-filiere-piles-accumulateurs.html>

It is worth noting that a visible fee for portable batteries is supported by Eucobat<sup>90</sup>:

*Separately invoicing the net collection and recycling costs related to waste batteries will benefit the environment, consumers, authorities and all economic actors involved in the distribution of the new batteries. In particular, it guarantees the financing of the development of a collection network with a sufficient density for effective collection of all batteries and of the required communication campaigns to create consumer awareness of this collection network, and it simplifies the market surveillance activities of the national authorities, without having an impact on the commercial relations between the economic actors.*

As noted in the earlier discussions on the other product groups, care will be needed to ensure that revenue does not exceed costs and that the ongoing financial stability of the overall system, and individual PRO financing in competitive schemes, is carefully considered in regard to the overall net balance between malus and bonus charges.

## 9.0 Fee Modulation for Other Items

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In the sections below we provide a summary of current fee modulation (if it exists) and reflect on the potential for modulation by specific criteria for the following items:

- Agricultural Plastics (Section 9.1);
- Fishing Gear (Section 9.2);
- Furniture (Section 9.3); and
- Textiles (Section 9.4)

Full details for each are provided in the appendices.

### 9.1 Agricultural Plastics

Four existing agricultural plastic EPR schemes (France, Germany, Ireland, and Sweden), and one recently discontinued scheme (Andalusia), were reviewed. There is some variance between the schemes in terms of who fees are charged to and at what point they are collected. However, the way in which fees are set is relatively consistent. The majority of schemes set fees according to the end of life cost, in places referred to as the reverse value chain. This recognises that different agricultural plastics and applications incur different end of life costs owing to demand for secondary material, extent and likelihood of contamination, and their capacity to be recycled. In some schemes, this is a simple classification into groups – for example in Ireland fees are split into two

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<sup>90</sup> Recasting the Battery Directive: introducing the visible environmental fee for batteries put on the market, EUCOBAT, April 2016

categories. In other schemes, a more granular classification is used – for example in France, fees are set for ten different product types.

At present, it seems as though EPR schemes for agricultural plastic are not utilising fees to specifically incentivise use of certain materials or dissuade the use of others. The focus has been on ensuring that the varying end of life costs are covered. There is, however, potential to modulate fees in future. Modulation of fees by inclusion of recycled content was discussed with some interest from schemes. Such a measure could help to increase demand for secondary content within agricultural plastics, and improve the economies of recycling for these materials as a whole. This could be of particular benefit to the sector, with many of the schemes reporting difficulties in finding reprocessing capacity for their films following the Chinese import restrictions. In line with the principle outlined in Section 5.3, it would be important to consider whether other policy measures might be more suited to achieve this objective.

The use, and modulation of fees for biodegradable plastics was also discussed. Many of the schemes reflected that due to the nature of use of agricultural plastics in their country, there was little demand for biodegradable plastics and it was not something they were considering – this was the case in Sweden and Ireland. In France however, biodegradable mulch films are used and these are not subject to the eco-contribution. As such, an incentive exists for farmers to use these products. In addition, as they are not removed from the soil post-use, there is no collection fee to be paid and with the increased fee for mulch plastics in the scheme (as a result of Chinese restrictions) the relative financial benefit of using biodegradable mulches has increased. Resultantly, France has seen a 30% increase in demand for biodegradable mulch films in 2019.

Full details are provided in Appendix A.4.0

## 9.2 Fishing Gear

At present, the schemes which exist for collection and recycling of fishing gear are not ‘typical’ extended producer responsibility schemes. Given the value of fishing gear at end of life, the schemes do not charge producers a fee for gear placed on the market, as activities are generally financed by the revenue generated from recycling. The cost of logistics in Iceland and Norway is covered by the fishing vessel owners with vessel staff responsible for cleaning and sorting gear and vessel owners covering the cost of transport to a reprocessor – although in some instances reception facilities are provided in ports. As such, there is no fee modulation in the schemes as presently run. For Iceland, if the recycling targets are not met the scheme may be legislated under an advanced disposal fee in future. At this point, the scheme would look at modulating fees for gear.

Furthermore, the scope of the EPR scheme is important. There are numerous stakeholders involved in the production and use of fishing gear. From artisan fishers and SMEs, to the net assembler and manufacturers of components. Indeed, fishers often specify what type of fishing net they want, resulting in bespoke designs. There is a question, therefore, over who should bear the costs, where costs will get passed onto and who is most able to pay, and indeed respond to possible future incentives that arise through potential fee modulation.

One of the key challenges for recycling fishing gear is the use of mixed materials during manufacture, not all of which have value for recycling. In order to be effective, an EPR scheme should accept both valuable and 'non-valuable' materials, as is the case in Norway.<sup>91</sup>

### 9.2.1 Potential Fee Modulation

In principle, fees would increase for fishing gear which is more harmful to the environment. It is possible that fishing gear could be modulated according to a number of criteria, including:

**1) Design for recycling:**

- a. Fewer polymers- the variety of polymers used in a single piece of fishing gear makes preparation for recycling costly and time consuming. A single gill net can contain a floating swimline made of PP or PE, net panels made of nylon and a sink line with a lead core and PET shell.
- b. Giving preference to materials for which secondary markets exist, or which are technically easier to recycle. Polyamide (nylon) for instance, which makes up much fishing gear, is already well recycled in part due to its high value.
- c. Use of colourants to distinguish different polymer type
- d. Alternatives to heavy metals in sink lines.

It is important to note, however, that fishing gear is designed to be highly durable, such as through the use of composites like Kevlar. This is at odds with designing for ease of machine shredding for recycling.

**2) Design for dismantling:** the structural strength of fishing gear, which is inherently designed to be robust and durable, inhibits dismantling. Pots and traps are almost impossible to recycle given their structural complexity and durability involving armoured steel frames, rubber ties, and nylon or PET meshing. Gear could be designed to include fewer types of components, or fixings which are re-closable.

**3) Design for reuse/recovery:** In many cases, old fishing gear is reused by fishermen. In particular ropes from gillnets, ground gear on trawls and crab pot ropes, although no data on reuse is available. One stakeholder reported that some elements of gill nets have been reused for as long as 40 years.<sup>92</sup> Examples of best practice from abroad which were highlighted included the Swedish west-coast fishing community of Smögen where the company Niskareföreningen Norden is reusing 80% of end-of-life gear to make new products including new trawls, sports equipment and safety nets.

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<sup>91</sup> KIMO (2019) *Exploring extended producer responsibility schemes for fishing gear*, accessed 10 October 2019, <http://www.kimointernational.org/news/exploring-extended-producer-responsibility-schemes-for-fishing-gear/>

<sup>92</sup> Stakeholder Webinar, Fishing Gear (20.06.2019)

- 4) **Design for disposal:** reduction of hazardous metals in components such as lead weights in sink lines for gillnets.
- 5) **Recycled content**
- 6) **Fishing gear/net type:** given the diversity of fishing gear, fees could be modulated according to type and/or the frequency at which they are lost, for example:
  - a. Gillnets;
  - b. Long lines;
  - c. Purse seine;
  - d. Pots and traps; and
  - e. Pelagic or midwater trawls.

Underlying all these criteria is one vital design feature - retrieval. To help facilitate the retrieval of lost gear, innovative tagging methods have been explored, including the use of miniature passive acoustic transponders that can be attached to gear to help locate lost gear. The devices, which are about the size of a matchbox and can be manufactured for under £50, detect and automatically respond to incoming signals which can be transmitted by a search vessel or by fishing vessels within a range of three kilometres.<sup>93</sup> Indeed, most fishermen already carry creeps (a device used to retrieve lost gear) and stressed that the value of gear, in particular trawls, is such that if lost, fishers will expend considerable effort to retrieve the gear.<sup>94</sup>

Accordingly, there is no clear ‘front-running’ criterion for fee modulation at present. Further work with stakeholders would be required to understand whether benefits could genuinely be achieved through fee modulation, and if so to identify the most applicable approach.

Further details are provided in Appendix A.5.0.

### 9.3 Furniture

Éco-Mobilier was set up as the PRO for France’s furniture EPR scheme in 2011 and is a not-for-profit organisation approved by the French Ecology, Sustainable Development and Energy Ministry. Éco-Mobilier first received accreditation on 1<sup>st</sup> January 2013 for a five-year period and has since been granted a 6 year renewal for the period of 2018 – 2023.<sup>95</sup> In 2020, Éco-Mobilier proposes to make significant changes to the current contract and tariff system used to fund the scheme to reach their goal of zero waste furniture sent to landfill by 2023. It is hoped that extra funds raised from these changes

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<sup>93</sup> Newcastle University (2019) *Miniature transponders to be used in the war against ocean plastic*, accessed 24 July 2019, <https://www.ncl.ac.uk/press/articles/latest/2019/04/nettag/>

<sup>94</sup> Stakeholder Webinar, Fishing Gear (20.06.2019)

<sup>95</sup> [https://www.eco-mobilier.fr/wp-content/uploads/2018/09/note\\_d\\_info\\_fabricants\\_europeens\\_internationnaux\\_uk\\_2018\\_v2.pdf](https://www.eco-mobilier.fr/wp-content/uploads/2018/09/note_d_info_fabricants_europeens_internationnaux_uk_2018_v2.pdf)

will fund more collection points for waste furniture in France and encourage manufacturers to improve the recyclability of furniture.<sup>96</sup>

Éco-Mobilier is responsible for collection, sorting, recycling and recovery of used furniture and mattresses. In 2018, end-of-life quilts and pillows were also added to the scheme.<sup>97</sup> Producers fulfil their EPR obligations by funding the scheme via ‘eco-fees’. Éco-Mobilier is then responsible for conducting, commissioning or funding collection, removal and processing services for furniture waste and paying the share of contributions owed to collection partners, primarily local authorities.<sup>98</sup> End-of-life furniture can be deposited at one of over 4,000 collection points in France, most commonly located at public waste centres, distributors or local authority collection points.<sup>99</sup>

Fees are currently set based on the challenges associated with recycling specific furniture items. Producers can benefit from lower tariffs by producing furniture items which are primarily made of the same material that are easy to recycle; wood or metal. Changes will be made to the fee system at the start of 2020 which will see the scheme continue to offer producers lower tariffs for producing furniture items of primarily easy to recycle materials (wood and/or metal).

Full details are provided in Appendix A.6.0.

## 9.4 Textiles

France is the only country in the world implementing a mandatory EPR scheme for end-of-use clothing, linen and shoes.<sup>100</sup> France’s policy on EPR came into force in January 2007, stipulating that all producers who place new products on the market of clothing, shoes and household linen (TLC)<sup>101</sup> intended for households shall contribute to or provide for recycling and the treatment of waste from these products.<sup>102</sup> Producers can fulfil this obligation either by contributing financially to a PRO that will enter in agreement with those in charge of waste management (i.e. local authorities) and provide financial support for recycling and waste treatment of waste textiles, or putting in place an individual system of recycling and waste treatment of waste textiles. Textile producers have largely chosen to meet their EPR obligations via a PRO; Eco TLC, a not-for-profit private company constituted of 29 associates from industry, was set up at the

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<sup>96</sup> Éco-Mobilier, *Contract De Services 2020*, 2019

<sup>97</sup> <https://www.eco-mobilier.fr/en-savoir-plus/>

<sup>98</sup> [https://www.eco-mobilier.fr/wp-content/uploads/2018/09/nouveau\\_contrat\\_uk.pdf](https://www.eco-mobilier.fr/wp-content/uploads/2018/09/nouveau_contrat_uk.pdf)

<sup>99</sup> Éco-Mobilier, *Rapport d’activité 2017*, 2017, p. 15

<sup>100</sup> Mohammad Abdullatif Bukhari, Ruth Carrasco-Gallego and Eva Ponce-Cueto. ‘Developing a national programme for textiles and clothing recovery’, *Waste Management & Research*, 36, 4 (2018), pp. 321 – 331 (p. 321).

<sup>101</sup> Represents the French for clothing, linen and footwear (Textiles d’habillement, Linge de maison et Chaussures)

<sup>102</sup> Environmental Code – Article L541-10-3



end of 2008 and acts as the single PRO for the sector, currently representing 95% of the textiles industry.<sup>103</sup>

Modulated fees were initially set to encourage producers to increase the percentage of recycled content used in new textiles items. Eco TLC most recently added durability as a criteria for certain products only (t-shirts, jeans, jumpers, bedsheets and shoes). These products need to meet two of the following criteria to be eligible for the modulated fee:

- Dimensional stability
- Colour fastness
- Abrasion resistance
- Piling

The durability modulated fee cannot be applied to a textiles item in addition to any discount for recycled content.

Full details are provided in Appendix A.7.0.

## 10.0 Equal Treatment

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### 10.1 Context

The concept of ‘equal treatment’ is included in Article 8a(1)(d) of the revised WFD as follows:<sup>104</sup>

*“...ensure equal treatment of producers of products regardless of their origin or size, without placing a disproportionate regulatory burden on producers, including small and medium-sized enterprises, of small quantities of products.”*

The two particular elements of note for the concept of ‘equal treatment’ are:

- Producers are treated equally regardless of their origin or size; and
- Disproportionate burden is not placed on producers of small quantities of products.

It is important that this is understood in the context of the polluter pays principle, which is enshrined in EU Law. Article 191(2) of the Treaty on the Functioning of the European Union (TFEU) states that:

*“Union policy on the environment shall aim at a high level of protection taking into account the diversity of situations in the various regions of the Union. It shall be based on the precautionary principle and on the principles that preventive*

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<sup>103</sup> WRAP, *UK Textiles EPR*, 2018

<sup>104</sup> OJEU (2012) Consolidated Version of The Treaty on the Functioning of the European Union, Official Journal of the European Union, 26<sup>th</sup> October 2012, available at <http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012E/TXT&from=EN>

*action should be taken, that environmental damage should as a priority be rectified at source **and that the polluter should pay.***<sup>105</sup>

The other element of context relevant to this study is the requirement for accurate information around production and end-of-life treatment of material. This has been a focus of the recent project “Study to Support the Implementation of Reporting Obligations Resulting from the New Waste Legislation Adopted in 2018” which has recently been submitted to DG Environment by Eunomia.<sup>106</sup> This study sets out the methodology by which various environmental reporting obligations are to be measured. In all instances, accurate and comprehensive data is highly beneficial to the fulfilment of these reporting obligations.

The following analysis in this section refers back to these three key elements of EU law and policy.

The approach taken in the analysis is to:

- 1) Assess examples of attempts to achieve ‘equal treatment’ among existing EPR schemes.
- 2) Assess examples of where there is deviation from ‘equal treatment’, or the potential to deviate from equal treatment.
- 3) From these determine a set of principles that might lead to ‘equal treatment’.

These steps uncover aspects or principles of ‘equal treatment’ which can then be used to develop initial guidance around how ‘equal treatment’ may be achieved by Member States in their EPR schemes.

## 10.2 Example Approaches to Equal Treatment

With a large number of existing EPR schemes across the EU, addressing a variety of product types, operating diverse business models and operating in a wide range of geographies, there are a number of different approaches to ‘equal treatment’ already in evidence. Most, but not all, of these have evolved to address issues relating to smaller producers, as specifically highlighted in Article 8a. Given that these approaches are already in existence, it is appropriate to analyse these in the first instance.

The detailed survey of both Producer Responsibility Organisations and Member States yielded a wide variety of approaches to ‘equal treatment’ as expected.<sup>107</sup> These almost exclusively related to a De Minimis threshold, under which reduced fees and/or reporting was allowed in order to reduce burdens on smaller producers. These

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<sup>105</sup> Emphasis added

<sup>106</sup> European Commission (2018) *Proposal for a regulation of the European Parliament and of the Council on the alignment of reporting obligations in the field of environment policy*, May 2018, [http://ec.europa.eu/environment/legal/reporting/pdf/1\\_EN\\_ACT\\_part1.pdf](http://ec.europa.eu/environment/legal/reporting/pdf/1_EN_ACT_part1.pdf)

<sup>107</sup> In total 33 PROs and 62 Member State representatives responded to the survey.

approaches can be summarised as follows, with the headline figures shown in Table 10-1:

- **No De Minimis and no reduction in requirements.** This approach comprised roughly half of the respondents (of both PROs and Member States) and reflected a desire to ensure that all producers bore their share of end of life costs, and that reporting was achieved across all producers. The majority of respondents taking this approach felt that the introduction of a De Minimis regime would be problematic for equality, citing free-riding and loss of reporting.
- **De Minimis threshold.** The other half of respondents reported operating some form of De Minimis threshold below which there were reduced burdens of some form. There is a wide variety of approaches to using a De Minimis threshold, but the rationale common to all has been to reduce administrative burdens for smaller producers, and also for the PROs themselves. The majority of respondents taking this approach felt that it was advantageous for equality, citing the reason of reducing disproportionate burden on smaller producers. Thresholds are defined in one of the following ways:
  - **Placed on Market (Tonnage) Threshold.** This approach to thresholds is designed to reflect the mass of end-of-life processing the producer is responsible for, enabling those contributing very little end-of-life material to have reduced burdens. It is the most common threshold in use at present. It is, however, more data intensive than the other forms of threshold. This is due to the need for a producer to know the weight of each material type included in each product type that they produce. For some producers this might be a simple calculation if they have relatively few products, but for producers of a greater variety of products, or more complex products, this can rapidly become a challenging exercise.
  - **Unit (number of sales) Threshold.** In a couple of instances (for example France - Packaging) there are unit-based thresholds. These are designed to enable easier identification of whether smaller producers actually fall above or below a threshold. It is relatively simple for a producer to identify how many products it has placed on the market, which is in contrast to the more data intensive weight calculations already outlined. This form of threshold requires some form of correlation between numbers placed on market and associated tonnages. Usually this is achieved through having a set of average weights and associated material compositions for each unit type, enabling the PRO (or other party) to take the unit declaration and translate it into a tonnage placed on market. This reduces the burden for producers, but places it on other parties.
  - **Turnover (€m) Threshold.** A turnover threshold is designed to allow producers to have reduced burdens depending on their administrative capacity to engage with an EPR scheme, and also to allow easy determination of whether a producer falls above or below the threshold. This does not take into account volume of end-of-life material generated, though depending on where the threshold is set it will usually only include

smaller producers. It also requires standard engagement by larger producers that place little on the market. It is understood that this approach is based on the assumption that large organisations (regardless of production volumes) have greater capacity to deal with administrative burdens.

- **Combination Thresholds.** Some schemes operate a combination approach whereby two thresholds are applied concurrently. The most common is a 'placed on market' threshold and a turnover threshold. By operating both together it enables producers to only have reduced burdens if they produce small volumes and they are a small organisation. This does, of course, require greater data to operate, as the producers will need to provide two forms of data, for example their turnover and tonnage placed on market as in the UK packaging EPR scheme.

In many instances, there are systems that have a number of thresholds, rather than just a single one in order to provide more nuance to a De Minimis approach. This can lead to a gradual reduction of responsibilities, or multiple cliff-edges at which there are major changes. The setting of each threshold, and the method by which it is set, will determine this.

**Table 10-1: Proportion of Respondents Operating a De Minimis Approach**

	De Minimis Operated	De Minimis Not Operated	Total
<b>Number of Respondents</b>	45	50	95
<b>Proportion of Respondents</b>	47%	53%	100%

An overview of the methods of threshold calculation is provided in Table 10-2. This analysis shows that there are drawbacks to each approach, with each leading to challenges for the implementation of 'equal treatment'.

**Table 10-2: Analysis of Threshold-Setting Methods**

Method	Advantages	Disadvantages	Contribution to ‘Equal Treatment’
<b>Placed on Market (Tonnage)</b>	<p>Relates directly to the amount of material placed on the market, which then has to be managed at end-of-life.</p> <p>Directly relates to the statement in Article 8a that discusses the quantity of product</p>	<p>Challenging to calculate for smaller producers, increasing administrative burdens for them and/or the PRO.</p>	<p>Supports the definition of ‘equal treatment’ as being related to quantity of product placed on the market, but may create additional administrative burdens in its use for smaller producers.</p>
<b>Placed on Market (Units)</b>	<p>Relates partially to the amount of material placed on the market, which then has to be processed.</p> <p>Partially relates to the statement in Article 8a that discusses the quantity of product.</p> <p>Relatively simple for producers to calculate</p>	<p>Requires conversion factors to calculate tonnage placed on market, increasing PRO burdens and potentially reducing accuracy of data.</p>	<p>Broadly supports the definition of ‘equal treatment’ as being related to quantity of packaging or product placed on the market, but needs processing to ensure accuracy.</p> <p>Less burdensome for smaller producers.</p>
<b>Turnover</b>	<p>Publicly disclosed value that does not require any additional calculations.</p> <p>Reflects the size of an organisation and therefore to some extent, its’ capacity to deal with administrative burdens.</p>	<p>Does not directly relate to the quantity of product or packaging placed on the market.</p>	<p>Ensures quick and simple determination of those falling above/below threshold(s)</p> <p>Does not address the Article 8a criterion relating to quantities of products.</p>
<b>Combinations</b>	<p>Can create more nuance than a single method.</p>	<p>Can create additional burden and confusion.</p>	<p>It depends on the combination, but in most instances, it is likely that more criteria will lead to greater burden for producers.</p>

The nature of what reductions in burden are applied in each instance vary significantly. It is possible to map out the options on a matrix as shown in Table 10-3. The options are:

- **Fees**
  - **No Fee:** No fee is charged to producers under the De Minimis threshold.
  - **Flat Fee:** A single, flat-rate fee is applied to all producers under the De Minimis threshold regardless of how far under the threshold they fall.
  - **Reduced Fee:** A reduced rate is applied to producers falling under the threshold, but this is still applied in proportion to the amount placed on to the market.
  - **Full Fee:** The full fee is still applied to producers falling under the De Minimis threshold (always associated with reduced reporting requirements)
- **Reporting**
  - **No Report:** There is no requirement for a report from an organisation falling under the De Minimis threshold. This often leads to concerns over free-riding among stakeholders.
  - **Simple Report:** The requirements for information provided to a PRO are reduced for producers falling under the De Minimis threshold.
  - **Full Report:** There are no reductions in reporting standards for organisations falling under the De Minimis threshold.

**Table 10-3: Combinations of Reporting and Fees from Surveyed Schemes**

	No Report	Simple Report	Full Report
No Fee	B, P	E, P	P
Flat Fee	X	B, E, P	B, E, P
Reduced Fee	B	B, E, P	X
Full Fee	X	E, P	X

*Key: B = Batteries schemes; E = EEE schemes; P = Packaging schemes*

The combinations indicate the diversity of the approaches currently taken to avoid disproportionate burden, or reduce the burden, with most combinations being used. However, there is significant variation by scheme focus. EEE schemes are concentrated around simplified reporting approaches, though spread across all fee types, whereas packaging schemes exhibit a wider range of approaches. The responses for battery schemes were relatively few and so there is less diversity, though it is still more distributed than EEE schemes.

## 10.2.1 Case Study: French Packaging EPR

CITEO, the PRO for packaging in France operates a three-tiered approach to achieve 'equal treatment'.<sup>108</sup> The tiers (which have been labelled 1, 2 and 3 for convenience) are set out in Table 10-4. It is useful to consider this example as an illustration of the methods that can be employed in EPR schemes.

**Table 10-4: CITEO De Minimis Approach**

Tier	CITEO Name	Threshold	Reporting	Fees
1	The €80 Flat Rate	<10,000 Units	Self-Declared	€80 Flat Rate
2	The Sector-Specific Declaration	10,000 – 500,000 Units	Reduced Reporting (units)	Fee per unit (by product type)
3	Declaration per CSU	>500,000 Units	Full Reporting (tonnages & units)	Fee per unit and by weight (by packaging type)

There are a number of factors of note in this scheme, which help highlight 'equal treatment' issues.

### 10.2.1.1 Unit based thresholds

CITEO operates a set of thresholds that use the number of eligible consumer sales units (CSUs) produced by an organisation as the means for determining which regime they are subject to. It is relatively easy for producers to determine where they fit within this threshold system as they can readily determine the number of units they have placed on the market in the given timeframe. This makes it an easy scheme to engage with, regardless of the size of the producer – and therefore this could be seen as aiding 'equal treatment'. This contrasts with tonnage calculations, which are more challenging. In this system, tonnage calculations are only required as part of the reporting regime for those producing >500,000 CSUs.

### 10.2.1.2 Reporting

The difference in reporting between the tiers is quite significant, with the smallest producers having no obligation to provide detail about the exact numbers placed on market, or their weight. They are simply required to self-declare that they are below the threshold. In the second tier, there are reporting requirements by unit number and type, but the tonnages are not required. In the third tier, producers must report both

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<sup>108</sup> <https://www.citeo.com/actualites/le-tarif-2019-pour-le-recyclage-des-emballages>

tonnages and number of units, providing a more onerous regime but yielding much greater detail and accuracy in data.

This means that there is a disparity in reporting and data between different sized producers. This could be perceived as diverging from 'equal treatment' and also as problematic in that it reduces the accuracy of data on what is placed on the market.

For Tier 2, CITEO has developed factors that can convert CSUs into weights of material. The tariff documents show a set of example calculations, alongside charge rates for specific CSUs. This demonstrates an approach that reduces burden for smaller producers whilst providing data for reporting obligations. It requires greater effort from the PRO as conversion factors have to be researched and kept up-to-date. It does also introduce some uncertainty. Nonetheless, if accurate conversion factors are used, this should offset challenges around data completeness and integrity for Tier 2. This could therefore be seen as a method of achieving 'equal treatment' whilst meeting reporting obligations for smaller producers.

### 10.2.1.3 Fees

The fee approach varies significantly between the tiers. Tier 3 uses a system whereby both the weight of the material used, and the number of units combine to inform the fee. This is a detailed calculation that attempts to ensure that the producer pays the cost associated with the end-of-life processing required for their packaging.

By contrast, Tier 1 producers have only a flat-rate fee. For a very small producer of, say, 100 units, this means that they are paying €0.8 per unit. A producer of 10,000 units is paying €0.008 per unit. This variation in price per unit appears to contradict the 'polluter pays' principle, as it appears all smaller producers are paying as if they have contributed c.10,000 units. It is questionable whether this flat-rate at Tier 1 is in line with the concept of 'equal treatment'.

The fees for Tier 2 are based once again on conversion factors. As a result, whether this achieves the concept of 'equal treatment' depends on whether the conversion factors are sufficiently accurate such that producers in Tier 2 are charged appropriately.

## 10.2.2 Lessons from Attempts at 'Equal Treatment'

There are widely varying interpretations of what 'equal treatment' actually means with reference to smaller producers, both by country, and by scheme focus (packaging, WEEE, batteries). The fundamental differences are between those who do not have a De Minimis approach and feel that no De Minimis should be operated, ensuring everyone pays their 'fair share', and those who operate a De Minimis to reduce disproportionate burdens for smaller producers and feel that this is the right approach. This tension is reflected within Article 8a itself, and the balance between these two legitimate perspectives is at the heart of this section of the project. That the split between respondents is roughly 50:50 in favour of each approach is notable, and indicates the lack of consensus among respondents.



This lack of consensus is further emphasised by the diversity of De Minimis thresholds and reporting & fee approaches used by current schemes. It is clear that many of these still leave unresolved problems relating to the concept of ‘equal treatment’ as the respondents raise concerns about issues such as free-riding, or lack of accountability for smaller producers. The CITEO case study highlights potential challenges resulting from the use of De Minimis approaches, and these, along with other challenges, are now analysed in Section 10.3.

## 10.3 Elaboration of Key Principles

By referring back to the Directive, the TFEU and the Reporting Obligations, and examining current practice, it is possible to derive a number of key principles that need to be adhered to in order to achieve equal treatment. The following section outlines each of these principles and the justification for them.

### 10.3.1 Reporting Burden – Producers of Small Quantities

***Reporting should not be disproportionately challenging for smaller producers.***

A significant issue identified by both Member States and PROs was the impact of administrative burdens on small producers. This is specifically discussed in Article 8a(1)(d) and was identified as an area for attention by stakeholders. The primary issue identified is the time and effort required by both the producers and the PROs in collating and processing the information required. Whereas major producers are considered to have sufficient administrative capacity, smaller producers are thought not to have this capacity readily to hand. It should be noted here that it is theoretically possible for a small producer (in terms of packaging or product placed on the market) to be a large business, in which case the administrative burdens would not be disproportionate to the organisation’s size, but could be argued to be disproportionate to the amount of material placed on the market. However, Article 8a specifies that EPR schemes should:

*“...ensure equal treatment of producers of products regardless of their origin or size, without placing a disproportionate regulatory burden on **producers, including small and medium-sized enterprises, of small quantities of products.**”<sup>109</sup>*

This indicates that burden should not be disproportionate to the amount of material placed on the market, regardless of the size of a producer.

A further issue is the way that data is held by a business. Larger businesses are more likely to have advanced information management systems that enable them to deal with complex reporting requirements. An advanced information management system will allow for almost infinite data query combinations, enabling a skilled operator to access the information required (e.g. number of units, material type, material mass etc.) with relative ease. By contrast, smaller businesses may well not have such facilities, and

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<sup>109</sup> Emphasis added

therefore hold information in less accessible formats, or in a manner that requires significant processing to yield the answer. For example, it may well be that a smaller producer holds data on the number of units it has placed on the market, but does not hold this information by weight. This data will then need processing to facilitate reporting by weight, which may result in substantial administrative demands should there be a wide variety of different product weights for the products placed on the market.

Avoiding complexity for smaller producers can therefore be seen to be appropriate, especially in light of the specific requirement for there not to be disproportionate burdens.

### **10.3.2 Reporting Burden – Producers Selling to Multiple Markets**

#### ***Reporting harmonisation should be facilitated across all Member States***

An often-overlooked issue is the increase in administrative burdens faced by producers caused by engaging with multiple, varied EPR schemes. The fundamental challenge identified by many larger producers is engagement with a wide diversity of reporting requirements across different PROs. This diversity can occur wherever a producer sells into a number of different geographical regions where there are different EPR schemes in operation. Each PRO they engage with will have their own thresholds, fees and reporting requirements. It is the reporting requirements that are identified as most challenging for the producers, as providing data in multiple formats increases effort significantly.

Of course, these challenges could also be faced by smaller producers selling into multiple geographies, but it is more common among larger producers as they more often sell into multiple markets. It follows that this is also a form of divergence from ‘equal treatment’, as organisations selling into multiple markets are disadvantaged compared to those selling into a single geographical area, even if they are placing the same amount of material onto the market.

This form of inequality could - as described in Section 5.1 on overarching principles for fee modulation, and Section 6.5.1 in respect of reporting structures for packaging - be readily addressed by harmonising data reporting requirements, enabling producers selling across multiple markets to provide information in a repeatable manner to multiple PROs, reducing their burden. So long as data reporting harmonisation was sufficiently detailed this should not lead to any problems for PROs or Member States. It would also facilitate the provision of accurate data for reporting obligations, increasing the potential for identifying and thus tackling free-riding.

Through harmonising the reporting requirements, all producers would only need to report in one form regardless of size, material placed on market, or number of markets operated in.

### **10.3.3 Minimum Reporting Requirements**

#### ***Reporting for smaller producers should not compromise market data integrity***

### ***Reporting for smaller producers should not facilitate free-riding***

The major issues identified by producers relating to reporting requirements that vary according to the size of a producer are:

- 1) It can facilitate the **free-riding** phenomenon. By having a reduced or non-existent reporting requirement following the initial or regular registration assessment, there is significant opportunity for organisations to grow beyond the De Minimis threshold(s) without any visibility of this to PROs or Member States. Thus, reduced reporting requirements can have a significant benefit for organisations close to the threshold should they choose to withhold information, leading to them gaining an unfair advantage.
- 2) It limits the **accuracy and completeness** of data collected about the market as a whole. Accuracy of market data is important to ensure a level playing field, and is also critical to the EU's Reporting Obligations. Reduced reporting compromises the accuracy of such data, with gaps having to be filled with estimates based on a number of assumptions.

Given that reduced reporting requirements can facilitate free-riding, and that it provides incomplete data on the market which is required for reporting obligations, it follows that reporting requirements for smaller producers should not facilitate either of these issues.

#### **10.3.4 Fee Equality**

##### ***Fees should be charged according to the 'polluter pays' principle, for both end-of-life costs, and PRO operation (including administration)***

Many PROs choose to offer reduced, flat-rate or even no fees to producers of smaller volumes of products. This is often done in the name of reducing administrative burdens, for example because a flat fee is simple to administer. This raises a contradiction with the 'polluter pays' principle. Whilst it is evident that smaller producers will produce less, it does not follow automatically that they should pay proportionately less for the end-of-life requirements of their packaging or products. Nor should they pay proportionately more if they happen to be disadvantaged by a flat rate calculation. If the polluter pays principle is to be respected, then it would require that smaller producers pay their fair contribution towards end-of-life costs regardless of their scale of operation.

This introduces a wider consideration of the funding of PROs and their operations, and how this is shared between producers. In order to address this, it is necessary, conceptually, to split the fees that PROs charge into the following two major elements:

- 1) Cost of end-of-life activities; and
- 2) Cost of operation of the PRO, including administrative functions etc.

As already discussed, the end-of-life costs are directly related to the polluter pays principle. Whether a smaller producer is paying nothing, less by proportion or indeed more by proportion than the major producers, there is a clear issue around fairness (see Section 10.3.8 on the importance of not permitting discounted 'stepped' rates for larger producers). It does not appear that paying the proportionate end-of-life costs associated with a small number of products can be classified as disproportionate according to

Article 8a. If, therefore, the polluter pays principle is to be upheld, small producers should contribute proportionately to the end-of-life costs arising from the packaging or products they place on the market.

It is the second element, the cost of operating the PRO including administration costs, that creates greater challenges in determining 'equal treatment'. It is clear from PROs that it is much less burdensome per unit of compliance for them to engage with larger producers, as they have the capacity to engage in reporting requirements, and therefore require less support from the PRO. This is augmented by large volumes (and therefore revenues) associated with a single reporting obligation. By contrast, smaller producers are numerous and often require significant support, whilst contributing less in terms of revenue due to low volume throughputs. This dynamic could incentivise behaviour by PROs that attempts to exclude smaller producers if they have the ability to – for example by setting unrealistic fees to deter applications.

It could follow that the smaller producers should pay a greater administrative fee due to their greater need for support. This is clearly not tenable as it contradicts the requirement to not place disproportionate burdens on smaller producers, as identified in Article 8a.

In this situation, it is suggested that the 'polluter pays' principle could once again be used to inform an approach to 'equal treatment'. PROs exist in order to prevent 'pollution' through the collective funding of end-of-life operations for different product categories. The costs of running PROs is a direct consequence of the end-of-life requirements created by products and packaging being placed on the market. PRO operation costs should thus be funded **in proportion to the products or packaging placed on the market by a producer**, rather than the administrative burden it places upon the PRO.

Taking this approach would mean greatly reduced administration fees for smaller producers, with the larger producers covering most of the running costs of the PRO. At first glance this may seem 'unequal' to the larger producers; however, it is a reflection of the situation whereby the PRO exists to address end-of-life costs associated primarily with them.

It must be noted that in many cases the costs of operating a PRO are not separately charged for (for example with an annual membership fee), but rather are part of the fees charged for material placed on the market. It is not necessarily *how* the fees are presented to producers that matters, it is that the total fees payable by a producer reflect the 'polluter pays' principle, following the end-of-life demands they are responsible for. It would be the responsibility of a PRO to ensure fee rates were set at a level whereby they could fully discharge their responsibilities.

### 10.3.5 Threshold Calculation

***De Minimis thresholds (if any) should be determined using the minimum reporting requirements required for all producers***

This principle stems from the Reporting Obligation requirements. This will require a basic level of reporting by all producers relating to material placed on the market. If all producers will have to report to a minimum standard, then it follows that this minimum standard should be the method by which any De Minimis thresholds are calculated. As all organisations will have to report to at least this standard, it would not create an additional administrative burden to use this minimum standard to determine thresholds (if any are used at all).

### 10.3.6 Threshold Transition

***Transitions from below to above any De-Minimis threshold should minimise scope for confusion and conflict***

Even having a threshold can create a deviation from ‘equal treatment’ for those who happen to be close to it, as they may have to produce additional evidence to show that they are below the threshold if that is the case.

This is, of course, less likely to occur where the difference in cost to the producer between being above and below the De Minimis threshold is relatively small – for example moving to a full fee from a flat fee. Nonetheless, such ‘threshold effects’ should be noted as potentially creating divergence from ‘equal treatment’.

### 10.3.7 Threshold Setting

***It must be possible for Member States to set any de Minimis thresholds at levels appropriate to their specific circumstances***

Harmonisation of thresholds across Member States (if indeed thresholds are used) could potentially pose a challenge as:

- 1) In smaller states, most or even all of the producers could fall under a De Minimis threshold that made sense for larger countries; or
- 2) In larger states, a large number of relatively small producers would not fall below the De Minimis threshold that made sense for smaller countries.

Member States therefore need to set thresholds appropriate for their particular local situation.

### 10.3.8 Larger Producer Stepped Rates

***Stepped fees for larger producers should not be used***

Whilst a rarity, in a couple of instances PROs operate a reduced fee rate for producers placing larger amounts onto the market. This is a source of divergence from ‘equal treatment’, as it reduces the payments made for per unit end-of-life costs, contradicting the ‘polluter pays’ principle. This is unnecessary and sends a signal to the market that greater volumes of products require less end-of-life processing per unit. Whilst it could be argued that there are economies of scale here for end-of-life treatment, it should not follow that these should be directed to those that create the most need for the end-of-life treatment.

### 10.3.9 Point of Compliance

***A single point of compliance should be used across all Member States***

There is a variation between EPR schemes with regards the element(s) of a supply chain at which compliance is required. A Member State has a number of points along the supply chain at which it could require compliance, and this could be achieved by a single point or multiple points.

Challenges arise when a supply chain is required to comply at multiple points as this then means that parts of a supply chain may fall under thresholds, whilst others are over thresholds depending on the different players in the supply chain at different stages. It may mean that some packaging or products are paid for on multiple occasions, whilst others paid for only once, or not at all if falling below certain thresholds.

It can be surmised that the complexity of operating an EPR scheme that attempts to achieve compliance at multiple points in the supply chain is such that administration will become more complex and therefore it is harder to identify non-conformity, such as free riders.

Using a single point of compliance for each waste-stream in a Member State introduces much greater simplicity into the system. It is known exactly when products and packaging need to be accounted for and therefore it is much easier to see which organisations need to be registered with a PRO. By extension there will also be fewer organisations needing to register with a PRO, further reducing burdens for the PROs. Consideration of where online sales sits in terms of producer and/or distributor status is an important consideration.

Whilst the costs associated with an EPR scheme will be administered at a single point of the supply chain for the supply chain of the products it addresses, they will end up being borne by the all of the players as costs will be reflected in prices in the chain, ensuring that the burden does not solely fall upon one type of producer (e.g. packer-fillers).

It is therefore suggested that for simplicity, but also to ensure maximum coverage by EPR schemes, a single point of compliance is used by PROs and that this point be harmonised across Member States such that there is complete clarity regarding who should be registered, and that organisations operating across borders know clearly whether they have to be registered or not. Consideration of where online sales sits in terms of producer and/or distributor status is important.

### 10.3.10 Competition

***Competition cannot be on the basis of modulation or volume placed on the market***

***Transparent fee information should be available to producers***

The polluter pays principle requires that there should be no link between the volume placed on market and price paid per unit to PROs for end-of life costs. This decoupling has a potential impact on the competition between PRO schemes where there is not a

monopoly. It implies that the PROs can only make commercial offerings based on their overall efficiency (i.e. their operational costs).

This needs to be considered in the context of modulation. It has been noted in Section 5.11 that there should not be competition between PROs on the levels of fee modulation, as this would rapidly erode the potential influence of modulation if offers were made based on reducing the modulated element. By extension, it should also not be possible for PROs to make commercial offers that undermine modulation in an indirect manner, such as by varying fees according to scale.

It is therefore important that PRO schemes are not competing on either modulation or on volume placed on the market if modulation and equal treatment are to be respected. This requires that competition between PROs is limited to areas outside of these issues, such as their operational efficiency. This is in contrast to some current situations where competition exists, and is based on giving discounts to larger producers, clearly contradicting the polluter pays principle.

The need for transparency over fees to achieve equal treatment should also be noted. It is necessary for fees to be clearly and accurately communicated by PROs such that equal treatment is ensured and, where a competitive situation exists, producers have sufficient information to make an informed choice of PRO.

## 10.4 Recommendations

In light of these principles, it is possible to assess what this means for the design and operation of EPR schemes in the EU. In this section, the key elements of EPR schemes are discussed with reference to the 'equal treatment' principles and associated provisional guidance for Member States suggested.

### 10.4.1 Membership of a PRO

The relevant principles that affect PRO membership are:

- Reporting for smaller producers should not compromise market data integrity;
- Transitions from below to above any De-Minimis threshold should minimise scope for confusion and conflict; and
- A single point of compliance should be used across all Member States.

In order for there to be adequate reporting requirements for smaller producers, it follows that it is necessary that all producers, regardless of size or origin, should join an appropriate PRO and report accordingly. This requirement also prevents any issues around policing of when producers should join a PRO, reducing the possibility of challenges occurring at a threshold.

In some instances, producers will discharge their end-of-life obligations themselves. In such situations these producers will still need to join a PRO in order to report their production figures and to validate their end-of-life treatment arrangements unless alternative provisions are in place whereby producers report directly to a central

register, for example. In this instance, as the producer is addressing the pollution issue caused by their products, they need only be charged a simple administration fee.

A single point of compliance will simplify administrative demands and provide clarity on responsibility for end-of-life costs. For simplicity it is recommended that this single point of compliance is as follows (taking account of the restrictions imposed by the producer definitions in the relevant directives):

- Packaging:<sup>110</sup>
  - Where the Packer/Filler is located in the MS, the **Packer/Filler or brand owner**; or
  - Where the Packer/Filler is located outside the MS, the **Seller**, whether they are located in the MS or are a distance seller.
- WEEE:
  - Where the OEM is located in the MS, the **OEM or brand owner**; or
  - Where the OEM/brand owner is located outside the MS, the **Seller**<sup>111</sup>, whether they are located in the MS or are a distance seller.
- Batteries:
  - The **Seller**.<sup>112</sup>

Further information regarding the obligations of online sellers is given in Section 11.0.

#### 10.4.1.1 Summary Guidance

- All producers at a single, specified point in the supply chain should join a PRO, regardless of size of organisation or quantity of products or packaging placed on the market, unless if responsibility is discharged individually, and producers report directly to a central register, for example.
- The single point of compliance should be as follows:
  - Packaging:
    - Where the Packer/Filler is located in the MS, the **Packer/Filler or brand owner**; or

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<sup>110</sup> In the case of Directive 2019/904 it may be more appropriate, for example, for manufacturers of single-use beverage cups, for example to be the producer, rather than the beverage vendors at individual establishments

<sup>111</sup> In line with the WEEE Directive producer definition, the seller would be the organisation that places EEE on the MS market for the first time on a professional basis. 'Placing on the market' means supplying or making available, whether in return for payment or free of charge, to a third party within the Community and includes import into the customs territory of the Community.

<sup>112</sup> In line with the Batteries Directive producer definition, the producer can only be the organisation that places batteries and accumulators on the MS market for the first time on a professional basis, which is termed here the 'seller'. 'Placing on the market' means supplying or making available, whether in return for payment or free of charge, to a third party within the Community and includes import into the customs territory of the Community.



- Where the Packer/Filler is located outside the MS, the **Seller**, whether they are located in the MS or are a distance seller.
- WEEE:
  - Where the OEM is located in the MS, the **OEM or brand owner**; or
  - Where the OEM/brand owner is located outside the MS, the **Seller**<sup>113</sup>, whether they are located in the MS or are a distance seller.
- Batteries:
  - The **Seller**.<sup>114</sup>

## 10.4.2 Reporting Requirements

The four principles that affect reporting requirements are:

- Reporting should not be disproportionately challenging for smaller organisations;
- Reporting harmonisation should be facilitated across all Member States;
- Reporting for smaller producers should not compromise market data integrity; and
- Reporting for smaller producers should not facilitate free-riding.

To ensure market data integrity and help prevent free-riding requires adequate minimum reporting from all producers. When combined with a strong case for harmonised reporting for simplicity, this implies a common minimum standard of reporting that is not disproportionately burdensome for smaller producers. This standard would then also be the method of determining any De Minimis thresholds should they be deemed necessary.

Minimum reporting should be sufficient to enable adequate market data integrity, and is recommended in Table 10-5.

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<sup>113</sup> In line with the WEEE Directive producer definition, the seller would be the organisation that places EEE on the MS market for the first time on a professional basis. 'Placing on the market' means supplying or making available, whether in return for payment or free of charge, to a third party within the Community and includes import into the customs territory of the Community;

<sup>114</sup> In line with the Batteries Directive producer definition, the producer can only be the organisation that places batteries and accumulators on the MS market for the first time on a professional basis, which have termed here the 'seller'. 'Placing on the market' means supplying or making available, whether in return for payment or free of charge, to a third party within the Community and includes import into the customs territory of the Community.

**Table 10-5: Minimum Reporting Requirements**

Waste Stream	Reporting Type	Categorisation
Packaging	Units Placed on Market	Product Group and Size. At present there is no appropriate set of product groupings and so it is suggested that the Commission develop an appropriate set of categories for reporting.
WEEE	Units Placed on Market	Categorisation from Directive 2012/19/EU
Batteries	Units Placed on Market	The proposed categorisation is included in Section 8.2. This should be augmented with Industrial and Automotive as two additional categories

A more detailed reporting method should be the default for EPR schemes to ensure market data integrity and should only be replaced by the minimum reporting approach where it is deemed necessary to reduce the reporting requirements for smaller producers so as to avoid disproportionate burden.

Whilst Member States have no obligation to do so, harmonisation of fees between Member States will facilitate significantly reduced burdens for producers. This relates to the type of data requested, the format of the requested data, and the frequency of requested data. If possible, Member States should consider if they can require reporting that aligns with other Member States.

**10.4.2.1 Summary Guidance**

- All EPR schemes must apply a minimum reporting standard to all producers, using units placed on the market within simple categorisations.
- Larger producers should be subject to the full reporting requirements.
  - Any minimum reporting standards must only be applied to a small proportion of the total volume of products or packaging placed on the market by producers.
- Member States should seek to harmonise reporting requirements and frequencies with other Member States in order to reduce administrative burden for producers.

### 10.4.3 Use of De Minimis for Reporting Requirements

In order to avoid disproportionate burdens to producers of small quantities of material, it may be desirable to have a minimum reporting requirement that requires less reporting. It is, of course, desirable for all producers to give full information to ensure that there is complete accuracy in data; however, it is realistic that this full reporting will provide a significant challenge to some smaller producers. It may be that the number of members for a given PRO who may struggle with reporting is sufficiently small that the PRO is able to adequately support them with reporting to remove the need for a reduced reporting requirement; however, this may not always be the case. Indeed, it is likely that the method by which smaller producers would be supported is through the use of conversion factors applied to unit reporting.

As a result, it is suggested that a PRO may apply a De Minimis approach for reporting requirements, but only between the minimum and full reporting requirements. It is not acceptable to operate further reduced reporting requirements as this will compromise market data. It is vital that the value of this threshold is set such that the majority of products accounted for by the PRO are reported to the full standard.

The method of setting of such a De Minimis threshold is discussed in a subsequent section.

#### 10.4.3.1 Summary Guidance

- A De Minimis threshold may be used to determine when minimum reporting and full reporting to PROs are required. The Member State should decide whether this is permitted.
- No De Minimis threshold may be used to remove any producers from minimum reporting requirements to PROs.

### 10.4.4 Fee Requirements

The principle that affects fee requirements is:

- Fees should be charged according to the ‘polluter pays’ principle, for both end-of-life costs and administration.

They will fundamentally vary according to products or packaging placed on the market, but be modulated according to a number of criteria.

The above principle requires fees for **PRO operational costs** to be distributed according to the quantity of material placed on to the market. In many EPR schemes this is not the case, but it should be possible to achieve if the minimum reporting requirements are in place, as this will provide sufficient information to enable variable fees to be charged.

Unlike the fees for end-of-life costs, fees for PRO operational costs should not be subject to modulation. Introduction of modulation onto administrative fees would introduce complexities into EPR schemes that would not yield any particular benefit. By their nature, administration fees are small compared to the costs of end-of-life processing. Modulation of what is already a very small fee would not create any change in fee that

could create any significant benefit, and would also require further analysis to be made by the PRO, increasing burdens.

Therefore, for simplicity, fees covering PRO operational costs should be in proportion to the quantity of products or packaging placed on the market, and applied to all producers. Thereby the 'polluter pays' principle is satisfied, and there is unlikely to be a disproportionate burden for smaller producers.

#### 10.4.4.1 Summary Guidance

- PRO end-of-life fees should be levied according to the quantity of products or packaging placed on the market, but these may be modulated according to the fee modulation guidance.
- PRO operational cost fees should be levied according to the amount of material placed on the market for all producers, with no reference to any form of modulation.

#### 10.4.5 Use of De Minimis for Fee Requirements

Once again it is helpful to split fees between end-of-life costs and administrative costs.

For **end-of-life costs**, introduction of a De Minimis threshold underneath which fees were reduced or even eliminated would be a clear contradiction to the 'polluter pays' principle as smaller producers would pay proportionally less (or nothing) for the end-of-life costs.

The **PRO operational cost** element of fees is perhaps less clear. If, as already argued, these fees are varied according to the quantity of products or packaging placed on the market, then the fees themselves will be very small indeed for smaller producers. Given that these fees will be very small for smaller producers, it would appear that introduction of a De Minimis threshold would not create any significant advantage for smaller producers, and indeed it may require greater administration to operate by the PROs as they will have to police the threshold.

As a result of this, it is recommended that there be no method by which a De Minimis threshold is used to vary fees, whether end-of-life costs or PRO administration.

#### 10.4.5.1 Summary Guidance

- There should be no use of De Minimis thresholds to reduce the size of end-of-life fees for smaller producers
- Subject to the administrative fee being calculated pro-rata based on the packaging or products placed on the market, there should be no use of De Minimis thresholds to reduce the size of the administration fee.

#### 10.4.6 Setting De Minimis Thresholds

It has been recommended that there be no De Minimis approaches for either element of PRO fees, and a single De Minimis threshold used for reporting should a Member State deem it necessary. The key principles relating to the setting of such a threshold are:

- Reporting should not be disproportionately challenging for any agent;
- De Minimis thresholds (if any) should be determined using the basic reporting requirements required for all producers;

The two principles are fundamentally the same. If all producers are to be required to report to a minimum standard, then it creates no extra burden to use this approach to determine which producers would fall below a De Minimis threshold.

The level of the De Minimis threshold, if used, will need to be determined such that it minimises loss of market data whilst facilitating reduced reporting burdens for producers of smaller volumes of products or packaging. The proportion of products/packaging placed on the market by producers of smaller volumes will vary according to each Member State. It is therefore not appropriate to set a specific level at which the De Minimis should be placed, whether by absolute volumes or by proportion. Instead it is recommended that Member States seeking to apply a De Minimis threshold consider at what scale of production full reporting will become achievable, and set the threshold accordingly, taking into consideration that only a very small minority of material should be falling under the De Minimis threshold.

It is also important to note that the De Minimis threshold could become a method of competition between PROs, driving up thresholds to reduce burdens. As a result, Member States should set a maximum level at which a De Minimis threshold can sit.

#### 10.4.6.1 Summary Guidance

- If a De Minimis threshold is used, it should be determined according to the minimum reporting standards.
- The threshold should be set with reference to the local situation whilst ensuring that only a very small proportion of material placed on the market falls under the De Minimis threshold.
- Member States should determine a maximum threshold for the De Minimis using a placed on market approach.

#### 10.4.7 Other Methods of Variation

The only other form of variation is by reducing fees for increased volumes placed on the market. This, as already discussed, clearly contradicts the ‘polluter pays’ principle, and should not be in use in EPR schemes.

##### 10.4.7.1 Summary Guidance

- Other forms of variation, such as stepped fees for larger producers, should not be used.

#### 10.4.8 Competitive Schemes

It should not be possible for PROs to compete by adjusting modulation or on the basis of volume produced. It should also not be the case that PROs can compete on any De Minimis threshold for reporting. As a result, it should only be possible for PROs to

compete on the basis of operational efficiency. Member States should therefore carefully consider the value that might or might not be added by a competitive system given the parts of the schemes that are not appropriate for competition.

The simplest way in which to ensure there is not competition on modulation or volumes would be to require PROs to publish their fees. Additionally, in order for there to be sufficient transparency of information to facilitate equal treatment, it follows that fee information should be published by PROs for producers to make informed choices.

#### **10.4.8.1 Summary Guidance**

- Member States should ensure that PRO competition only occurs on the basis of operational efficiency.
- Fees should be published by PROs

## 11.0 Tackling Free-Riding

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### 11.1 The Nature and Scale of the Problem

Under Directive 2008/98/EC on waste, as amended by Directive 2018/851, in relation to the minimum requirements for EPR schemes, paragraph 5 of Article 8a states the following:

*Member States shall establish an adequate monitoring and enforcement framework with a view to ensuring that producers of products and organisations implementing extended producer responsibility obligations on their behalf implement their extended producer responsibility obligations, including in the case of distance sales, that the financial means are properly used and that all actors involved in the implementation of the extended producer responsibility schemes report reliable data.*

Online (often distance) sellers may not be registered as distributors or producers either directly or via an Authorised Representative. This results in them not undertaking take back and/or not paying for collection and reprocessing, and hence imposing an unfair cost on other producers and retailers, making compliant companies less competitive. Being EPR compliant entails an administrative burden. For WEEE management the cost is, for certain sectors, 10% to 20% of the total sales price, and for batteries it can be 100%. Consequently the reward for avoiding EPR fees can be considerable. Since online free-riding risks resulting in underfunded waste streams, it may undermine the sustainability of the EPR scheme.

Free-riding also results in an understatement of POM (Placed on the Market) figures and hence an overstatement of collection rates. While there is no evidence to suggest that Member States have avoided stringent enforcement of free-riding, there may be a concern in some parts that do so would reveal an actual recycling performance below the level that was previously believed to have been attained.

While there are reported problems with physical sale of goods in one country and transfer of those goods across EU borders (e.g. from France into Belgium), the key problem is reported to relate to online distance selling. Online sales in the EU are growing rapidly (by over 18% from 2014 to 2015 alone).<sup>115</sup> According to a survey for Eurostat, a rising trend is observed for purchases from sellers in other Member States (from 25% in 2012 to 32% in 2016) and from sellers outside the EU (from 13% in 2012 to 20% in 2016).<sup>116</sup>

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<sup>115</sup> Extended Producer Responsibility and the Impact of Online Sales”, OECD, 2018

<sup>116</sup> (See [http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce\\_statistics\\_for\\_individuals](http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics_for_individuals))

While there is a lack of data in some market areas (including packaging), the problem has been investigated actively in regards to EEE (electrical and electronic equipment). The recent OECD study estimated that online free-riding to accounts for 5% to 10% of all EEE sales, while SENS eRecycling, a PRO in Switzerland, estimates that 5% of EEE placed on the Swiss market is non-compliant.<sup>117</sup>

An informal study by WEEE Forum members included a simple web-based search of a major UK online retailer for a range of product types to assess if the top hundred or so products were registered for WEEE by checking the producer name against the publically available WEEE producer register.<sup>118</sup> The results are shown in Table 11-1.

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<sup>117</sup> (See [http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce\\_statistics\\_for\\_individuals](http://ec.europa.eu/eurostat/statistics-explained/index.php/E-commerce_statistics_for_individuals))

<sup>118</sup> Informal investigation into potential online free-riding in the EEE retail sector, WEEE Scheme Forum, April 2018



**Table 11-1: WEEE Forum Study of potentially unregistered products**

Product category	Tablets		Power tools (electric screwdriver)		Fitness watches		Display		LED Lamps		Small EEE (hair products)		LHA (washing machine and dryers)	
	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
<b>Products surveyed</b>	70		70		50		25		120		113		120	
<b>Available “next day”</b>	70		45		50		0		65		89*			
<b>No. producers</b>	24		28		47		15				53		28	
<b>Products potentially unregistered</b>	28	40%	38	54%	44	88%	3	12%	91	76%	57	50%	9	8%
<b>No. producers potentially unregistered</b>	20	83%	24	86%	41	87%	3	20%			36	69%	7	25%
<b>*overseas sellers only</b>														

The level of free-riding was most marked in smaller products such as tablet PCs, electronic screwdrivers, fitness watches, hair care appliances and LED light bulbs: amongst such products, the proportion of products for sale that seem to be from unregistered producers varied from 40% to 88%. In larger products (display screen equipment and washing machines), the rate of non-compliance appeared to be far lower at between 8% and 12%, but still significant.

In terms of packaging, while there is far less data than for EEE, the Irish PRO Repak states that online/distance sales operate under a legal loophole and that (in the experience of the PRO) 'vast quantities' of unlicensed packaging are entering Ireland as a result.

Finally it is worth noting that there are links between free-riding and other illegal activity around imports, notably counterfeiting, fake product standards (CE marking) and tax evasion (import duty and VAT). While several of the online sellers are taking action themselves to prevent challenges like counterfeiting, EPR avoidance and evasion is receiving less attention.

## 11.2 The Key Causes of the Problem

EPR regulations are complex and confusing for overseas sellers, often with 28 different sets of regulation to understand and documentation formats to deal with. Many businesses are subject to three EU-wide EPR laws (WEEE, batteries and packaging), and yet divergence across these creates further complication and confusion. While the Authorised Representative (AR) concept can help improve understanding and facilitate registration for overseas producers, this is only of use to those that are aware of their obligations and willing to make the effort to seek an AR or join a PRO.

While awareness is considered to be an issue, according to the OECD, online free-riding is not just a small-seller problem, or one confined to seller websites outside the EU, for example in Asia.<sup>119</sup> By far the most significant free-riding problem in volume terms appears to relate to large and well-known multi-seller platforms with fulfilment centres in the EU. According to the OECD report there are particular problems when there is no legal entity in a Member State for enforcement authorities to take action against.

'Marketplace' multi-seller platforms often legally avoid EPR obligations as they are neither the seller nor the importer in terms of the contracts they have in place. The informal WEEE Forum study suggests that there are four key models to be aware of that can lead to online free-riding as shown in Table 11-2 (which refers to the UK but would apply equally across all EU Member States).<sup>120</sup>

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<sup>119</sup> "Extended Producer Responsibility and the Impact of Online Sales", OECD, 2018.

<sup>120</sup> Informal investigation into potential online free-riding in the EEE retail sector, WEEE Scheme Forum, April 2018

**Table 11-2: Models that can lead to Online Free-Riding**

Model	Description
<p><b>1. Overseas producer to consumer direct</b></p>	<p>Overseas producer with no UK presence supplied UK consumer direct through web site. Consumer transacts with overseas supplier only.</p>
<p><b>2. Overseas producer supplies to consumer through a UK location third party fulfilment house:</b></p> <ul style="list-style-type: none"> <li><b>a. Producer located inside Europe</b></li> <li><b>b. Producer outside Europe</b></li> </ul>	<p>Item is delivered in bulk by producer to UK warehouse where it can be delivered “next day” to consumer. Third party warehouse does not own the goods. The consumer transaction is through the fulfilment house.</p>
<p><b>3. Marketplace type transaction</b></p>	<p>Products advertised and offered to market via sales portal but fulfilment and delivery done by individual retailer or supplier. Portal does not have any physical control of goods.</p>
<p><b>4. Small UK wholesaler buying stock from overseas</b></p>	<p>Wholesaler buys from supplier on-line and then supplies to UK retailers and does not realise importer obligations.</p>

Source: WEEE Forum

It is also worth noting that consumers are generally not aware of the free-riding problem and in fact are often keen to exploit the lower cost of products supplied via overseas sellers. Furthermore, enforcement activity is resource intensive and not well co-ordinated within countries (e.g. in terms of environmental regulation and customs for example) and across jurisdictions.

**11.3 Member State Survey Responses**

An EPR free-rider survey was undertaken and yielded responses from 22 national authorities. The sample covers Nordic countries, Baltic States, as well as Central and Western European Member States and some Eastern European Member States. While not covering the full EU28, it can be seen as representative. The survey also yielded responses from 28 PROs from 18 different countries. About 1/3 of respondents are packaging PROs and the remainder cover WEEE and batteries streams.

**11.3.1 Legislative Responses to Free-riding**

Very few Member States have any particular legislation relating to free-riding beyond the provisions set out in the directives themselves.

The UK has an example of good practice in that the UK WEEE Regulations explicitly state that:

*“A producer who is established in the United Kingdom and who places EEE onto the market in any Member State other than the United Kingdom by means of distance communication will comply with their obligations under the Directive in that Member State.”*

This means that if the regulators from another Member State point out that UK online sellers are not meeting their obligations elsewhere, there is a legal means to prosecute them in the UK. It is not known if this facility has been used. Defra in the UK are considering changes to the packaging EPR regime whereby if the market operator is not a producer *per se* (a manufacturer, importer or brand owner), but *does* facilitate the EU import / market entry, for example through offering an online marketplace or fulfilment centre, they could pick up some form of obligation.

Other examples of steps being taken include:

- The Irish WEEE regulation has specific clauses relating to distance sellers who, among other things, are required to display their WEEE producer registration number on their websites.
- Altstoff Recycling Austria AG (ARA) notes that the Austrian Packaging Ordinance holds distance sellers from abroad liable to PRO participation. This obligation has been underlined by a legal case against Amazon in the country.
- The Spanish PRO AMBILAMP states that they are currently working on the free-riding issue concerning online sellers, both from a market research and a legal point of view.
- The French Government is seeking to make EPR applicable by default for cross-border trade of products unless manufacturers (or their representatives) can prove that they have fulfilled EPR obligations. This is identical to the provisions in the new revision of the VAT Directive.

In terms of data corrections, only a few Member States (AT, CZ) legally obligate PROs to adjust for free-riders in their reporting of volumes put on the market. However, PROs in some Member States do so voluntarily - NL, EE, IT, DE (WEEE), FI (WEEE and batteries). Furthermore, NL, DE, LT and IE state that PRO reporting is subject to independent verification.

### 11.3.2 Sanctions

There are no reported sanctions aimed at free-riding *per se*. Breaches of individual EPR obligations are mostly subject to administrative charges, with only a few Member States having in place criminal charges as well. Administrative charges vary widely, from ~900 EUR for late reporting (Sweden) to over ~1,950,000 EUR for very serious offences (Czech Republic). Criminal charges range between 1 and 3 years in prison. Hungary has an extensive penalty system according to a variety of breaches. For instance, falsely reporting POM in the case of portable batteries (except sealed batteries) is 1000 HUF/difference kg.

### 11.3.3 Enforcement Responsibilities and Activities

Responsibility for enforcement of EPR requirements differs somewhat between Member States but they typically have environmental ministries and/or environmental agencies as enforcing/auditing bodies. Some major exceptions are also in place though, with tax authorities having a leading enforcement role in HU for example. Local authorities generally have no role as they lack the resources for systematic enforcement efforts.

Systematic efforts for enforcing compliance and identifying free-riding are normally undertaken either solely by MS authorities or in cooperation with PROs. About a quarter of surveyed PROs claim to be monitoring and taking steps to deal with under-reporting and possible free-riders as it is in their interests to minimise the problem so as to keep costs down for their members. These efforts typically involve market research and cross-checking of reported data from previous years, but also in some instances involve customs authorities (e.g. NO, SE comparing customs statistics with PRO membership lists and reported volumes).

In Ireland the Environmental Protection Agency (EPA) has an enforcement programme for the WEEE and battery systems. The programme includes retail inspections, free-rider investigations, distance seller website reviews and producer audits. Distance sellers are required to register via an Authorised Representative if they do not have a distributor in country who can register. Issues relating to enforcement are also discussed by the WEEE & Battery National Monitoring Group chaired by the Department of Environment. Producer fees via the PROs support EPA activities. Programmes for systematic audits/inspections are also identified in certain other Member States, normally in the remit of tax/customs authorities (HU, HR, EE). Germany noted that it has plans to roll out an automated procedure for identifying potential free-riders by website keyword search.

Defra in the UK is working with one of the largest online multi-seller platforms which has voluntarily offered to require its sellers to show their EPR registration details when registering to sell relevant products (packaging, EEE and batteries) on the platform. Eucolight notes, however, that this still represents a loophole in that such producers could register as a small producers in countries where there is a de-minimis provision and still not be declaring all that they sell. Consequently such a provision would need to be backed up with audit work to ensure that small producers (if small producers were to be exempted) are just that.

### 11.3.4 Working Groups and EU Networks

The free-riding issue has given rise to the formation of working groups in several Member States. In Portugal, for example, a working group composed of producer responsibility organisations and their associates, producer associations, controlling authorities and enforcement authorities, discuss solutions for every type of free-riding.

The European WEEE Enforcement Network (EWEN) is of great relevance. Established in 2017, EWEN is a network of sanction and enforcement bodies across 21 Member States. The network enables cooperation in the prosecution of cross-border free-riders as well as the exchange of best-practice solutions in enforcement and prosecution in relation to

the WEEE Directive.<sup>121</sup> In response to the survey, the Czech Republic, Ireland and Germany particularly noted their membership of the network.

### 11.3.5 Visible Fees

It has been noted that use of the Visible Fee for WEEE in some Member States is helpful in that consumers are familiar with it being shown at the point of sale and hence the absence of it can help to indicate an illegitimate seller.

## 11.4 Recommendations for Guidance

Free-riding typically takes the form of companies selling goods into a country where they are not contributing to either take-back for separate collection or funding the subsequent collection and treatment. Online selling, both from EU Member States and outside the EU, is becoming a particular problem and undermining legitimate producers, who have to do and pay more to compensate. Cross border trade is also a significant problem, in particular for smaller EU countries where lower cost goods may be available a short distance away in another Member State.

The following recommendations are presented as the most practical and cost-effective to pursue and would address both online and other key aspects of free-riding.

### 11.4.1 Key Recommendation - Multi-seller Platforms and Fulfilment Houses

Recent studies have shown the importance, as a major contributor to free-riding, of multi-seller platforms in hosting many hundreds if not thousands of sellers that are non-compliant. The OECD study estimated that this is around 5% to 10% of all EEE sales (one of the largest online platforms suggested around 7% by weight<sup>122</sup>), although subsequent work has shown that in some cases over 80% of sellers of certain products, such as LED lamps, can be non-compliant.<sup>123</sup> In many cases next day delivery is available, showing that the items in question are physically handled (rather than digitally) from an EU fulfilment centre, and hence that there is a legal entity in the EU that could take some responsibility.

Perhaps the most significant steps taken to tackle free riding in the WEEE compliance system is found in France, with the adoption in February 2020, of new obligations for

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<sup>121</sup> Sachse, A. (2018) EWEN – Update on activities related to WEEE enforcement, paper given at Meeting of the Experts' Group on Waste on the implementation of Directive 2012/19/EU on Waste Electrical and Electronic Equipment (WEEE), European Commission, 25 June 2018, <http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupMeetingDoc&docid=18166>

<sup>122</sup> Federico Magalini from Sofies, at a Commission stakeholder meeting, October 2019

<sup>123</sup> Recolight investigations in the UK

online platforms.<sup>124</sup> These obligations require online multi-seller platforms such as Amazon to ensure that the collection and recycling of WEEE arising from products marketed and sold on such websites is properly financed. The online platforms will, by default, be held responsible if they cannot prove that a business that sells a product on their site makes an ‘eco-contribution’.

It is recommended, therefore, that Member States should engage with multi-seller platforms as a key priority and obtain their commitment to action to deal with free-riding across EEE, batteries and packaging sales. Having different solutions and obligations at the Member State level can be problematic under Internal Market rules, therefore Member States should endeavour to follow the recommendations given here where possible.

Obligations could be at one of several levels:

- 1) Sign up to an e-commerce codes of practice – a standard for e-commerce web sites (single and multi-seller) that includes the showing of Producer Responsibility Organisation registration details for each seller (as required in Ireland) selling into the Member State in question, the legal entity address and contact information, and potentially a logo. This could build on the SafeShops.be model and similar e-commerce quality labels. This would provide a mechanism for enforcement authorities and informed consumers to check, but would still require a lot of work for the authorities in verifying the validity of registration details.
- 2) A requirement on e-commerce platforms, in compliance with the rules on intermediary liability foreseen in the E-Commerce Directive, to:
  - a. include information requested concerning seller EPR registrations as part of the platform registration and contractual process; and either
  - b. limit access to those that cannot show appropriate EPR documentation for the products they sell when this remedy is proportionate; or
  - c. take on the EPR obligations of their sellers (potentially as an AR or potentially as a producer) where the platform company:
    - i. is of sufficient size for this obligation not to be disproportionate (most multi-seller platforms would be); and
    - ii. facilitates import (fulfil delivery) and the seller is not EPR registered (with a PRO/AR); and/or
    - iii. the seller falls below an EPR de minimis in the Member State that excludes them from obligations.

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<sup>124</sup> LOI n° 2020-105 du 10 février 2020 relative à la lutte contre le gaspillage et à l'économie circulaire [https://www.legifrance.gouv.fr/affichTexte.do;jsessionid=BA3D39F50927B6906579115C6D42056B.tplgfr24s\\_2?cidTexte=JORFTEXT000041553759&categorieLien=id](https://www.legifrance.gouv.fr/affichTexte.do;jsessionid=BA3D39F50927B6906579115C6D42056B.tplgfr24s_2?cidTexte=JORFTEXT000041553759&categorieLien=id)

- d. provide seller quantity data in EPR product categories to PROs and regulators to allow auditing of declared quantities under EPR registrations, giving due regard to data protection rules.

Approach 2 is strongly recommended as the mandatory requirement that is most likely to have a certain impact and allows the regulators a far easier task than other options in that the onus is on a relatively small number of platforms, acting in a similar fashion to (if not as) ARs for the sellers on their sites. Approach 1 could still be utilised as a complimentary measure to help better inform consumers around seller legitimacy. It is worth noting that the multi-seller platforms are digital systems experts and will therefore be able to automate the process to minimise additional cost to themselves and their sellers.

It is worth noting in this context that the EU 'Blue Guide', as it applies to multi-seller online platforms, notes that:

*“where fulfilment service providers provide services ... which go beyond those of parcel service providers, they should be considered as distributors and should fulfil the corresponding legal responsibilities. Taking into account the variety of fulfilment houses and the services they provide, the analysis of the economic model of some operators may conclude that they are importers.”*

This would mean that it is legitimate to require fulfilment service providers to be obligated as distributors and potentially producers. It should be noted that not all multi-seller platforms undertake fulfilment, e-bay being a notable example. In this sense there may be less legitimacy to requiring such sites to take on AR or producer responsibilities, although 2 a), b) and c) would still be relevant.

It is to be noted that the EU Blue Guide also states that:

*“Following Article 15 of the E-commerce Directive, Member States cannot impose either a general obligation on these providers to monitor the content or a general obligation to actively seek facts or circumstances indicating illegal activity. This means that national authorities cannot establish a general obligation for intermediaries to actively monitor their entire internet traffic and seek elements indicating illegal activities such as unsafe products. The ban on requesting general monitoring, however, does not limit public authorities in establishing specific monitoring requirements, although the scope of such arrangements have to be targeted.”*

One of the larger platforms has proposed that all its EEE sellers are charged a flat rate fee per kg of product placed on the market; an average figure based on the overall obligation of all sellers across all EEE product groups. Whilst an interesting proposition, it should be noted that such an approach is flawed in several ways:

- Some sellers will already be registered and may therefore pay two sets of fees, once accurately through their own registration and once as an approximation through a flat rate platform charge;



- The flat rate charge will result in cross-subsidy between categories and no proper representation of eco-modulation factors;
- It doesn't allow for a Visible Fee to be shown for EEE; and
- It does nothing towards take back, unless part of the flat fee helps to subsidise municipality collection or bricks and mortar take back.
- Proving this service to its operators, something probably only large platforms with specific knowledge could design, would risk creating an advantage for certain platforms compared to others and contribute to tying the customer to that platform for convenience.

## 11.5 Other Potential Measures

### 11.5.1 Courier Obligation

Notwithstanding the current Blue Guide test (“where fulfilment service providers provide services ... which go beyond those of parcel service providers”) noted above, in some cases it would seem reasonable to place obligations on couriers and parcel services, where the seller (online or otherwise) does not have a bricks and mortar establishment in the country in question, i.e. are distance sellers without any other potential representative (such as a multi-seller platform or Authorised Representative).

This might be done potentially only for those over a certain size (i.e. the large multi-nationals), to take on the obligations (potentially as an AR) of distance sellers where the latter are not registered with a PRO or AR and the item is being delivered directly to the purchaser (i.e. the courier facilitates import). Larger courier and logistics companies, such as UPS, DHL, FedEx have delivery contracts with overseas e-commerce sellers and would therefore be motivated to ensure that:

- a) the sellers are registered where possible with a PRO/AR; or
- b) that any costs incurred by the courier company in fulfilling obligations are passed on contractually.

These obligations would only need to be financial in support of collection (where the courier does not want to be involved in physical take back, which has been shown in Belgium and the Netherlands to be problematic and not necessarily cost-effective) and treatment.<sup>125</sup> There may be a commercial benefit to companies in providing both logistics/courier and environmental compliance services bundled together across the EU and beyond. Reportedly, courier companies already have systems that allow the digital tracking of dozens of parameters per product/parcel, and hence it may only take marginal effort to increase this information to allow tracking of EPR registrations.

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<sup>125</sup> “Extended Producer Responsibility and the Impact of Online Sales”, OECD, 2018.

### 11.5.2 Harmonisation of EPR Regulations and Electronic Registration

Policymakers should consider making batteries, packaging and WEEE regulation for EPR as harmonised as possible in the sense of definitions for producer and distributor, the use of *de minimis* approaches and how distance sellers are dealt with. In regard to the last of these, legislation obligating the ‘facilitation of import’ could be used to capture couriers, multi-seller platforms and fulfilment houses.

Steps should also be taken to ensure that all producer and distributor registers are electronic, public and as standardised (e.g. in product code terms) for each product group as far as possible and with other Member States as far as possible (following EU guidelines). The trading name of the web site should be required for registration, as well as the legal entity name. The European Commission has implemented a common format for reporting in 2018, but further work is needed to extend to a fully harmonised producer registration system across the EU.

Further harmonisation, across product groups and Member States, will minimise confusion and cost for producers and facilitate information exchange and checking for free-riders by PROs and enforcement authorities.

## 11.6 Co-ordination within and between Member States

Producer responsibility organisations, enforcement agencies, customs authorities, trading standards authorities and tax authorities should pro-actively share information in a structured manner to identify and counter free-riding. Cross checking customs data in regard to imports vs products that are declared under EPR registration is one example, and is already happening in some Member States.

EPR and VAT registration could also be linked (as in some parts of the USA) - a VAT registration for a seller of EEE, batteries or packaging requiring an EPR registration and vice versa. Customs authorities could also require an EPR registration and PRO contract whenever they detect the importation of a product covered by EPR legislation. This type of interlinking and cross-checking of obligations is already done automatically where there are relevant databases; e.g. for vehicle MOT, insurance and road tax in the UK.

In view of this, a solution which is systemic and allows for simultaneous collection of various types of product data, with data streams then going to the right authorities, and potentially customers, would be helpful but would need further investigation; for example in regards to potential digital solutions and in regards to the host for such as system, potentially customs authorities.

At the EU level, the enforcement agencies of all Member States should be encouraged to be represented on the European WEEE Enforcement Network in order to optimise seamless co-operation across Europe. Similar networks could be established for batteries and packaging.

## 11.7 More Explicit and Fast-acting Regulatory Powers

Member States should explicitly build into national/territory legislation the ability to prosecute a company for illegal action in another country/territory to facilitate enforcement as per the UK example. Although, within the EU, this appears to be already technically possible through the principles of enforcement of judgements, enforcement agencies that were consulted saw all forms of prosecution as slow and costly given current approaches.

Member States should consider introducing additional enforcement powers, and enabling private actions, to prevent illegal online selling. In Ireland, for example, on-the-spot fines can be used to penalise non-compliant web sites rather than having to go through court procedures which can be slow and costly. In Germany, under the “Gesetz gegen den unlauteren Wettbewerb – UWG” law, a competitor can issue a “warning” (effectively a cease-and-desist letter) and demand compensation from a non-compliant producer, stop the producer from selling non-registered EEE (injunction), and request disclosure of sales and their recipients. The Federal Environment Agency can also request the “absorption” of profit gained through unfair competition.

## 11.8 Awareness Raising

Visible fees at point of sale (currently for WEEE only) can help signal the legitimacy of the seller in the eyes of the consumer. Visible fees potentially present problems in relation to the effectiveness of eco-modulated fees since the fees are paid by the consumer rather than the producer, and often too small a variation to affect consumer choice. Alternative product labelling could be used to inform consumers (on a Bronze Silver Gold or A to G basis) of the products eco-modulation score which would have a similar effect, raising consumer awareness of the products ‘green’ credentials whilst flagging the legitimacy of the seller.

Credit card companies could also be potentially involved in sharing responsibility, the principle being, for example, that a consumer cannot use their credit card to purchase goods from a company that should be EPR registered but is not. This would require some form of digital systems approach. It is important, however, that this is not done in a way that creates internal market barriers.

In terms of awareness raising among overseas sellers, PROs (and Authorised Representatives under the EU WEEE Directive) should be obligated to undertake promotional and awareness raising work overseas, and particularly in the Far East. This could be done through professional networks and trade associations for example.



# APPENDICES

## A.1.0 Packaging Fee Modulation in Italy

The Italian National Packaging Consortium (Conorzio Nazionale Imballaggi - CONAI) is the Italian PRO which ensures that the national recycling and recovery targets for packaging waste are met. There are 900,000 packaging producer and user companies within CONAI's consortium system, with specific consortia responsible for the six materials covered by the scheme, namely: steel, aluminium, paper, wood, glass and plastic.

CONAI has the freedom to determine its fee structure which has both basic and more advanced components. The system is based on a fee charged to all packaging materials. The rate varies by material and weight, and covers the costs associated with collection, sorting and reprocessing. Rates for 2019 are shown in Table A 1.

**Table A 1: CONAI Fees by Material, 2019**

Packaging type	From 1 <sup>st</sup> January 2019 €/tonne
<b>Steel</b>	€3.00
<b>Aluminium</b>	€15.00
<b>Paper and cardboard packaging</b>	€20.00. €40.00 for multi-material packaging with predominance of paper suitable for containing liquids.
<b>Glass</b>	€24.00 (€27.00 (from 1 <sup>st</sup> July 2019))
<b>Wood</b>	€7.00
<b>Plastic</b>	Level A €150.00 Level B1: €208.00 Level B2: €263.00 Level C: €369.00

Source: <http://www.conai.org/en/businesses/environmental-contribution/>

For plastic and paper packaging, the fees vary by type of packaging and/or subtype of material. In 2018 the CONAI Diversified Environmental Contribution (CAC) for plastic packaging was introduced; this forms the basis for modulating plastic packaging fees, which are shown in Table A 2. This presents a non-exhaustive list of the products included within each level. The products included within each contribution level are determined by the technology available for recycling. CONAI recognises that sorting and recycling technology is continuously evolving and thus, the packaging lists will be updated annually by the Permanent Technical Assessment Committee (PTAC).

**Table A 2: CONAI modulation product groups for plastic packaging from January 2019**

Level	Packaging Items Included	€/ton
<b>Level A: Commerce and Industry Circuit-sortable and recyclable</b>	<ul style="list-style-type: none"> <li>- Liners, Big Bags, Bags for industrial use.</li> <li>- Water dispenser bottles.</li> <li>- Caps to cover pallets/Big Bags.</li> <li>- Crates and industrial/agricultural Boxes/Large Boxes.</li> <li>- Bottle baskets.</li> <li>- Film for palletising and shrink film for overwrapping.</li> <li>- Caps, closures and lids for drums and IBC tanks.</li> </ul>	150
<b>Level B1: Household - effective and consolidated sorting and recycling chain</b>	<ul style="list-style-type: none"> <li>- PET, HDPE and PP bottles and detergent bottles, non-multilayer, transparent or coloured transparent, without covering label, or with label but with perforations/punching to facilitate removal and accompanied by instructions.</li> <li>- HDPE and PP bottles, detergent bottles and cans, over 5L capacity, in a colour other than black and without covering label or with covering label but with perforations/punching to facilitate removal and accompanied by instructions.</li> </ul>	208
<b>Level B2: Household - other sortable and recyclable packaging</b>	<ul style="list-style-type: none"> <li>- Reusable bags, compliant with current legislation.</li> <li>- Mechanical dispensers</li> <li>- Caps, closures and lids other than those in Level A.</li> </ul>	263
<b>Level C: Packaging not sortable/recyclable with current technologies</b>	<ul style="list-style-type: none"> <li>- Opaque PET bottles, detergent bottles and preforms.</li> <li>- Bottles, detergent bottles and similar made with polymers other than PET, PE and PP.</li> <li>- Bottles and detergent bottles and similar with covering label (other than those of Level B1).</li> <li>- PET bottles and detergent bottles and similar, multilayer with polymers other than PET, and preforms.</li> <li>- Black bottles, detergent bottles and the like, cans - over 5 litre capacity.</li> <li>- Bottles and detergent bottles and the like with glued or welded metal components (e.g. PET cans).</li> <li>- Cans, jars and other containers of any shape/size.</li> <li>- Labels.</li> <li>- Monolayer/multilayer film other than Level A.</li> <li>- Protective film, film for professional use and for garments.</li> <li>- Shopping bags, bags and small bags other than those of LEVEL A and LEVEL B2.</li> <li>- Disposable plates and cups.</li> <li>- Tubes, containers and trays.</li> </ul>	369

Source: [http://www.conai.org/wp-content/uploads/2018/12/Lists\\_of\\_plastic\\_packaging\\_in\\_the\\_Contribution\\_levels\\_2019.pdf](http://www.conai.org/wp-content/uploads/2018/12/Lists_of_plastic_packaging_in_the_Contribution_levels_2019.pdf)

The variation in fee is guided by three key principles:<sup>126</sup>

- Sortability;
- Recyclability; and
- For packaging meeting the first two criteria, the main target circuit of the packaging and its waste (Household or Commercial & Industrial)

The relevant conditions are as follows:

- **Sortability** - Where transit through sorting systems is necessary, packaging that meets all the following conditions is considered sortable:
  - **Exceeds the minimum size to be sortable** - Packaging which - on the sorting belt - provides a reading area, on one of the sides, of adequate size for the automated equipment currently installed in the Sorting Centres – CSS – (min 5 x 5 cm).
  - **Is identifiable on the sorting line** - Reading of the packaging surface is unequivocal and therefore the optical readers recognise the packaging surface. Not included in this definition is packaging which, depending on the side exposed, generates different reading responses.
  - **Ensures minimum sorting quantities** - The effectiveness of the sorting process decreases dramatically with low percentages of incoming material; therefore, on entering the sorting process, a minimum and homogeneous sorting quantity exceeding 2% of the total must be guaranteed.
- **Recyclability** – Packaging that meets all the following conditions is considered recyclable:
  - **There are one or more recyclers** (or lines are being designed on an industrial scale) that - through a mechanical and/or chemical-organic process - process the sorted material to produce a secondary raw material.
  - **There are one or more companies** (or lines are being designed on an industrial scale) **that use the secondary raw materials** resulting from the recycling activities.
  - **There is a minimum quantity (in case a dedicated line is required)**. The quantity of sorted material must be sufficient to feed at least one (mechanical and/or chemical-organic) industrial recycling line.
  - **Is compatible**. Packaging that is not compatible with relevant and industrially available known sorting and recycling technologies is not included.

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<sup>126</sup> CONAI (2018) *Explanatory Manual - Contribution Diversification for Plastic Packaging*, October 2018



- **Main target circuit of packaging and related waste**
  - ***The packaging is primarily used to serve the Commerce & Industry (Business to Business – B2B) channel.*** The qualitative and quantitative concentration of this packaging simplifies its collection and processing, directing its management mainly towards independent recycling circuits. This is a flow fed by companies that consign end-of-life packaging directly to professional operators.
  - ***The packaging is used primarily to serve the Household channel.*** This packaging is usually collected in the urban circuit. This category also includes packaging systematically assimilated with urban waste.

CONAI provides the following further information on recyclability and sortability:<sup>127</sup>

- **Recyclability:** At the national level, the definition is that provided in Annex F of Legislative Decree 152/2006, as amended and supplemented, which provides that: *“the packaging must be produced in such a way as to enable the recycling of a certain percentage by weight of the materials used in the manufacture of marketable products, in compliance with the regulations in force in the European Community. The determination of this percentage may vary depending on the type of material constituting the packaging”*.

The reference technical standard is UNI EN 13430:2005 which states: *“Ensure that the design of the packaging makes use of materials or combinations of materials that are compatible with known, significant and industrially available recycling technologies”*.

The standard also envisages that there may be misalignment between recycling technologies and the development of new packaging materials which present functional and environmental benefits. In such cases, packaging can nevertheless be defined as recyclable even if the recycling technologies are not yet available, if one can demonstrate the presence of developments towards the availability of industrial recycling ability within a reasonable period of time. CONAI have not indicated a specific time period that would be considered reasonable.

- **Sortability:** The packaging must be large enough to offer a reading area suitable for automated equipment currently installed in sorting centres. It must also have an unequivocal surface and therefore packaging which, depending on the side exposed, generates heterogeneous reading responses (e.g.: multilayer, poly laminates, composite packaging) does not fall within this definition.

The effectiveness of the sorting process decreases dramatically with low percentages of incoming material; therefore, on entering the sorting process, a

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<sup>127</sup> CONAI (2018) *Explanatory Manual - Contribution Diversification for Plastic Packaging*, October 2018

minimum and homogeneous sorting quantity exceeding 2% of the incoming total must be guaranteed.

It's worth noting that CONAI applied two overarching principles in developing the fee structure:

- 1) Revenue stability through seeking to ensure that the total fees for plastic under the new fee structure remain the same as they would have been under a single per tonne fee for plastic (which was €188/tonne in 2017) in order to adequately cover costs; and
- 2) Taking a gradual approach, and applying 'a phased approach to diversification' in order to make the process more gradual for companies.

Accordingly, with the focus on making steady changes, it might be expected that the incentive to change the design of specific packaging formats might be more muted than if there were to be a more radical divergence in fee structure. Indeed, this is feedback that we have received from stakeholders, who have noted that under the current fee structure there is limited incentive to switch from plastic packaging formats in Level C to those in Level B1, for example.<sup>128</sup>

In order to seek to understand the tonnage of plastic packaging formats that would fall into each category, and to thus inform the setting of fees to ensure revenue stability, a survey was undertaken of over 4,000 companies. However, there was no attempt to understand the extent to which the companies might shift to different packaging formats, or change their packaging design, as a result of the new fee structure.

## A.2.0 Packaging Fee Modulation in France

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The approach taken to modulation of fees for packaging in France is somewhat different to that applied in Italy. The required fee is based upon:<sup>129</sup>

- The weight of the material used;
- The number of 'Packaging Units' in the 'Consumer Sales Unit'; and
- An adjustment in the form of a bonus, or a penalty.

The contribution by weight of material is determined through applying the tariffs shown in Table A 3.

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<sup>128</sup> Personal communication with plastics industry stakeholder

<sup>129</sup> Citeo (2019) The 2019 Rate for Recycling Household Packaging, available at <https://www.citeo.com/sites/default/files/inline-files/Rate%20table%202019%20packaging%20english%20January%202019.pdf>

**Table A 3: Citeo Tariffs by Material**

<b>Material</b>	<b>Fee (€/kg)</b>
<b>Steel</b>	0.0456
<b>Aluminium</b>	0.1104
<b>Paper &amp; Cardboard</b>	
Paper & Cardboard *	0.1628
Bricks	0.2497
<b>Plastics</b>	0.3463
<b>Glass</b>	0.0140
<b>Other Materials</b>	0.3463
* The weight of paper and cardboard packaging incorporating raw materials from recycling is reduced by 10% if more than 50% of the packaging's total weight consists of recycled material. To benefit from the discount a certificate may be sent from the packaging supplier	

Source: Citeo

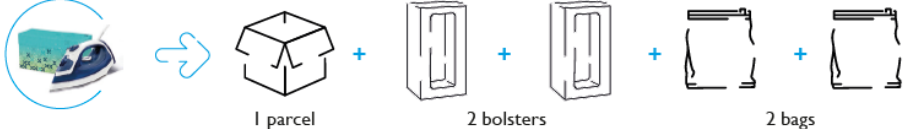
The contribution by consumer sales unit (CSU) is calculated based on the number of 'packaging units'. A packaging unit is a component of packaging that can be separated from the product when consumed or used by a household. All stoppers or closures (detachable stoppers, peel-off lids, lids, parts of blister packs without perforation etc.) Illustrative examples as provided by Citeo are shown in Figure A 1.

# Figure A 1: Illustrative Examples of Consumer Sales Units comprised of Packaging Units

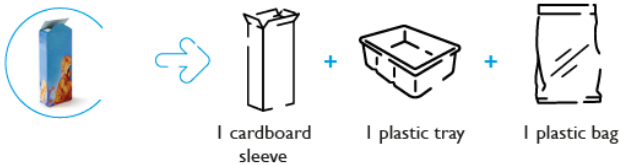
**A pack of 4 yoghurts = 9 packaging units**



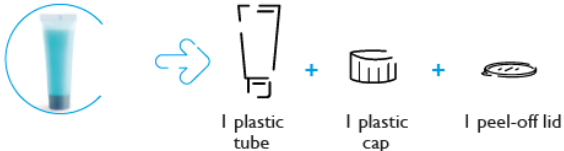
**Small appliances = 5 packaging units**



**Cake Box = 3 packaging units**



**Tube of cosmetic cream = 3 packaging units**



Source: Citeo

Contribution by CSU is calculated according to the number of packaging units per CSU, as shown in Table A 4.

**Table A 4: Citeo Contribution by Consumer Sales Unit**

Adjustment of Rules	Number of units per CSU	% adjusted	Price per CSU in €ct
<b>1 unit, regardless of weight = no adjustment</b>	1 unit		0.0627
<b>2 to 5 units = 80% adjustment for each unit</b>	2 units	80	0.1129
	3 units	160	0.1630
	4 units	240	0.2132
	5 units	320	0.2633
<b>6 to 10 units = 60% adjustment for each unit</b>	6 units	380	0.3010
	7 units	440	0.3386
	8 units	500	0.3762
	9 units	560	0.4138
	10 units	620	0.4514
<b>11 to 30 units = 40% adjustment for each unit</b>	11 units	660	0.4765
	12 units	700	0.5016
	13 units	740	0.5267
	14 units	780	0.5518
	...	...	...
<b>More than 31 units = 10% adjustment for each unit</b>	31 units	1430	0.9593
	32 units	1440	0.9656

Note: For packaging units whose weight is less than 0.1g, a 10% adjustment per packaging unit in the CSU is applied.

Source: Citeo

By way of example, in Table A 5 we provide an illustration of the contribution by weight of material, and contribution by CSU, for a pack of 4 yogurts as presented in Figure A 1. We assume that each yoghurt pot is designed to contain 125g of product, i.e. a total of 500g of product in the CSU. For comparison, we present the same calculation for a single large yoghurt pot that is also designed to contain 500g of product.

**Table A 5: Illustrative Contributions by Weight of Material and CSU**

	4x125g yoghurt pots in rider	500g yoghurt pot
<b>Weight of material (g)</b>		
Plastic	16	12
Paper & Cardboard	15	7
<b>Tariff by Material</b>		
Plastic - €/kg	0.3463	0.3463
Paper & Cardboard - €/kg	0.1628	0.1628
Plastic - € cents/g	0.03463	0.03463
Paper & Cardboard - € cents/g	0.01628	0.01628
<b>Weight based Fee</b>		
Plastic (€ cents)	0.55	0.42
Paper & Cardboard (€ cents)	0.24	0.11
<b>Total weight based fee (€ cents)</b>	<b>0.80</b>	<b>0.53</b>
<b>Contribution by CSU</b>		
Packaging units	9	4
<b>Contribution</b>	<b>0.41</b>	<b>0.21</b>
<b>Total Contribution by Material Weight and CSU (€ cents)</b>	<b>1.21</b>	<b>0.74</b>

On the basis of weight of materials alone, the fee for the 500g yoghurt pot is 66% of the weight-based fee for the 4x125g yoghurt pots in a rider. The addition of the contribution by sales unit has the effect of slightly increasing the differential. Accounting for both the contribution by weight and the contribution by CSU, the fee for the 500g yoghurt pot is 61% of the weight-based fee for the 4x125g yoghurt pots in a rider.

The total fee per CSU is determined as follows:

$$(Contribution\ by\ weight\ of\ material\ +\ Contribution\ by\ CSU) \times Bonus\ Penalty$$

## A.2.1 Bonuses

Several bonuses (i.e. fee reductions) are available in respect of the following:

- Plastic packaging already covered by the current sorting guidelines;
- Rigid plastic packaging that can join an existing recycling channel;
- Polyethylene (PE) containing at least 50% recycled material;
- Reduction at source and recyclability improvement; and
- Awareness-raising.

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 recycling channel. It's worth noting, however, that such modulation on top of a basic €0.3463/kg fee for plastics (with no distinction by the type of plastic) does not reflect the differing value of the resulting secondary materials, nor the effect on secondary material value of differing colours of PET, HDPE or PP.

A slightly lower bonus, of 8%, is available for packaging that can be added to existing recycling channels. For 2019 this includes rigid packaging *other than* bottles and vials where the body of the packaging (defined as the heaviest element comprising the primary packaging) is made of PET, HDPE or PP. Citeo states that:<sup>130</sup>

*Rigid packaging includes bottles, vials, boxes, cups and trays. Rigid packaging is characterised by a certain shelf life and resistance to deformation. The main element of the rigid packaging in general is thicker than 300 micrometres.*

Again, it's worth noting, that such modulation on top of a basic €0.3463/kg fee for plastics (with no distinction by the type of plastic) does not reflect the differing value of the resulting secondary materials, nor the effect on secondary material value of differing colours of PET, HDPE or PP.

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. Citeo indicates that such materials can come from the post-consumption recycling of household, industrial or commercial packaging, but post-production material, e.g. offcuts, is not eligible for this bonus.

This approach, in incentivising recycled content, is not taken by CONAI in Italy. A number of stakeholders consulted in the course of this study have commented that incentivising recycled content should not fall within the scope of fee modulation, as it has no impact of the costs of end of life management.<sup>131</sup>

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<sup>130</sup> Citeo (2019) The 2019 Rate for Recycling Household Packaging, available at <https://www.citeo.com/sites/default/files/inline-files/Rate%20table%202019%20packaging%20english%20January%202019.pdf>

<sup>131</sup> For example see EUROPEN (2019) Extended Producer Responsibility: EU Harmonised Principles for National Modulation of EPR Fees for Packaging, May 2019

A bonus of 8% is granted for reduction at source and improving recyclability, resulting from the implementation of one of the following actions:<sup>132</sup>

- Reduction at source:
  - Iso-material and iso-functionality weight reduction;
  - Reduction in volume with iso-functionality (e.g. by product concentration);
  - Use of refills; or
  - Reduction in the number of packaging units in a single CSU.
- Improving recyclability
  - Removal of a non-main material from a multi-material packaging unit;
  - Replacement of complex plastic rigid packaging with rigid mono-resin packaging improving its recyclability;
  - Addition of a pre-cut on a plastic sleeve (in PET, HDPE or PP showing a sleeve whose surface covers more than 60% of that of the packaging in question); or
  - Removal of carbon black dye from a plastic packaging item.

However, these bonuses apply only to the first year that the packaging is placed on the market, meaning that there is no long-term financial incentive to make and maintain such a switch. Furthermore, some stakeholders have commented that no incentive should be provided to stimulate weight reduction through the fee structure, given that the weight based fee should do this anyway.

An additional bonus of 4% can be applied in respect of reduction at source and improving recyclability if the action is documented and published in the catalogue of best practices produced by Citeo. For a single action, the bonus can therefore be as high as 12%. An important point is that if multiple measures for reduction at source or improved recyclability are implemented for the same unit, the related bonuses are not cumulative.

One possible effect of this rule, along with the fact that bonuses only apply to the first year that the modified packaging is placed on the market, could be that producers might be incentivised to steadily implement improvements over a period of several years in order to obtain the bonus each year, rather than make the beneficial changes in one go. We have not received evidence of this, but it would appear that the restrictions in respect of the bonus could encourage such behaviour. There is also no indication given to producers as to whether bonuses (or indeed penalties) will be maintained in future years, or whether the magnitude of the bonus (or penalty) is likely to be increased. Doing so would arguably give a much stronger incentive for producers to change the design of their packaging.

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<sup>132</sup> Citeo (2019) The 2019 Rate for Recycling Household Packaging, available at <https://www.citeo.com/sites/default/files/inline-files/Rate%20table%202019%20packaging%20english%20January%202019.pdf>



Bonuses are also available for awareness raising. There are three levels of *on-pack* bonus - which cannot be combined - depending on the information provided on the CSU:

- 8% if complete sorting guidelines are displayed;
- 5% if the packaging bears the 'Triman' logo but no sorting instructions;
- 4% if the packaging bears a QR code referring to a sorting guideline validated by Citeo.

An off-pack bonus of 4% is granted for undertaking a certain amount of expenditure on awareness raising on TV/radio/print media etc. This *can* be combined with the on-pack bonus.

## A.2.2 Penalties

Penalties are applied in relation to:

- 'Disruptive' packaging components;
- Packaging in the sorting guidelines without a recycling channel;
- PET packaging with mineral opacifiers; and
- Mineral oils in paper and cardboard.<sup>133</sup>

An important principle of Citeo's approach is that CSUs subject to a penalty cannot be awarded a bonus.

A 50% increase on the total contribution of the respective CSU is applied for the following 'disruptive' packaging:<sup>134</sup>

- Glass packaging with a porcelain or ceramic stopper;
- Drink cartons with paper/cardboard as the majority material but which contain less than 50% fibres;
- "Reinforced" paper and cardboard packaging;
- Bottles with PET as the majority material that also contain aluminium, PVC or silicon (with a density greater than 1)

PET bottles with hybrid peel-off lids (aluminium and plastic) that must be entirely removed before the product can be consumed are not classified as disruptive.

A 100% increase on the total contribution of the CSU is applied to packaging included in the sorting guidelines but without a recycling channel (i.e. plastic bottles that are not

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<sup>133</sup> In 2017, the French public authorities imposed a 10% penalty on contributions by weight for paper and cardboard material containing inks manufactured with mineral oils. However, in line with the action plan that Citeo is deploying with companies and in agreement with the local authorities, the application of this criterion is postponed to 2020 (no application on declaration 2018 nor on declaration 2019).

<sup>134</sup> Citeo (2019) The 2019 Rate for Recycling Household Packaging, available at <https://www.citeo.com/sites/default/files/inline-files/Rate%20table%202019%20packaging%20english%20January%202019.pdf>

made of PET, HDPE or PP, glass that is not soda-lime). This mark-up does not apply to plastic packaging other than bottles and vials.

A 100% mark-up is also applied on the contribution by weight to rigid opaque PET packaging where the body's mineral opacifier content is greater than 4%.

It is understood that to date, where bonuses or maluses have been proposed, they have not been proposed on the basis of any assessment of the likely level of change that they will bring about. However, an assessment of the likely change that would arise is seen as something that would be valuable in informing the setting of fees.<sup>135</sup>

### A.2.3 Approach to Setting Modulated Fees

Proposals for the criteria and magnitude of the bonuses and maluses are developed by a consultative committee convened by Citeo. This committee involves a range of relevant stakeholders, including brands, representatives of municipalities, operators of sorting facilities, and recyclers. The proposed approach must be signed off by the Environment Ministry.

### A.2.4 Plans for 2020 and Beyond

At the end of May 2019, Citeo published its proposals for the eco-modulation tariff to apply in 2020.<sup>136</sup> Within this document, Citeo acknowledges that having a single level of basic fee for all plastic packaging is not necessarily appropriate. It is noted that the broad category of plastics covers a range of different resins and packaging types, which exhibit differing levels of maturity in terms of recycling, but that a single level fee for plastics does not give a price signal to encourage the use of plastics with more developed recycling channels. Accordingly, Citeo proposes to apply a 'variable pricing' on the plastic fee to reflect this diversity.

Figure A 2 shows Citeo's view of the maturity of recycling for different types of plastic resins and formats.

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<sup>135</sup> Personal communication with Léonard Brudieu, Chef du bureau de la prévention des déchets et des filières de recyclage (REP), Ministère de la Transition écologique et solidaire, 18/06/2019

<sup>136</sup> Citeo & Adelphe (2019) Proposition de Citeo et Adelphe pour l'ecomodulation du tarif 2020, 29 May 2019

**Figure A 2: Relative Development of Recycling by Plastic Resin and Format**

Recyclable	6.1	Clear PET bottles	Packaging for which recycling is most developed and there is a high material value.
Recyclable	6.2	PE, PP or coloured PET bottles	Packaging for which recycling is well established.
In Development	6.3	Rigid PE, PP or PET packaging	Packaging that falls under the "Extension of Sorting Guidelines" and for which recycling is rapidly developing and there are material markets, but there is an issue with capacity.
In Development	6.4	Flexible PE packaging	Packaging that falls under the "Extension of Sorting Guidelines" and for which recycling is developing.
In Development	6.5	Rigid PS packaging	Packaging that falls under the "Extension of Sorting Guidelines" but for which recycling is only just beginning to be developed. Material outlets need to be found.
Suitable for Recovery	6.6	Complex materials or other plastic packaging excluding PVC	Packaging that doesn't have a recycling solution but is suitable for recovery for energy
Neither recyclable nor suitable for recovery	6.7	Packaging containing PVC	Packaging that doesn't have a recycling solution, nor is it suitable for recovery for energy

Source: Citeo

Citeo proposes to apply an uplift to the basic weight-based fee in line with the development of recycling as shown in Figure A 3. The levels of the uplift will be reviewed in future in line with any improvements in the extent to which such packaging types can be recycled.

**Figure A 3: Proposed Uplift to Basic Tariff**

Recyclable	6.1	Clear PET bottles	Basic Tariff
Recyclable	6.2	PE, PP or coloured PET bottles	+10%
In Development	6.3	Rigid PE, PP or PET packaging	+20%
In Development	6.4	Flexible PE packaging	+30%
In Development	6.5	Rigid PS packaging	+40%
Suitable for Recovery	6.6	Complex materials or other plastic packaging excluding PVC	+50%
Neither recyclable nor suitable for recovery	6.7	Packaging containing PVC	+75%

Source: Citeo

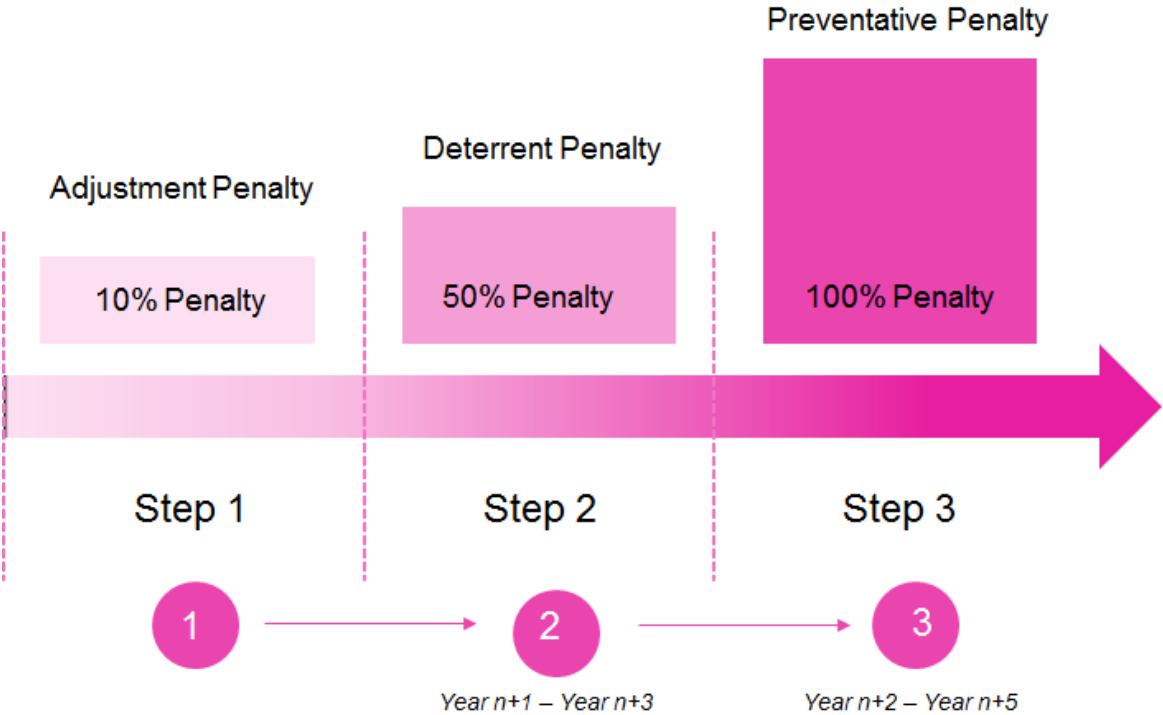
It's interesting to note that while recognising the limitations of the flat-rate fee for all plastic packaging, the way in which Citeo has sought to address it would still not necessarily reflect the net costs for managing the specific packaging type (accounting for material values). The material values will likely fluctuate over time, but as the uplift is based on a fixed percentage increase beyond the base fee, any change in material revenues will not be reflected in the modulated fee.

Nor would the modulated fee necessarily reflect accurately the relative contribution of the different packaging types to meeting the overall recycling rate.

Another significant change proposed is to establish the principle of a continuous, and increasing, penalty.<sup>137</sup> The rationale for doing so would be to give a more fulsome incentive for change, not only through increasing the magnitude of the penalty, but by giving those placing packaging on the market a clear signal as to the future direction of travel in respect of the penalty.

Any new criteria which means a penalty is incurred would see the penalty being set at 10% of the base fee in the first instance. The intention is that the penalty would be increased to 50% between 1 and 3 years after implementation, and to 100% between 2 and 5 years after implementation, as illustrated in Figure A 4.

**Figure A 4: A Continuous and Increasing Penalty**



Source: Citeo

The transition from one stage to the next would be proposed following consultation with the consultative committee for eco-design and eco-modulation, and would be subject to the agreement of the Ministry. In certain circumstances, where it is deemed to be merited, the penalty can be directly raised to 50% or even 100%.

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<sup>137</sup> Citeo & Adelphe (2019) Proposition de Citeo et Adelphe pour l'ecomodulation du tarif 2020, 29 May 2019

In the case of plastic packaging, any such malus would be applied to the relevant uplifted fee (not the base fee) for the relevant type of packaging. For example, if a malus of 100% were applied to packaging with a fee that is already uplifted by 50% over the base fee (see Figure A 3) the resulting fee to be paid would be three times the base fee.

## A.3.0 Packaging Fee Modulation Proposals in Germany

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Germany is different again from Italy and France, in that it has a system of competing PROs for packaging that determine their own fee structure. Until recently, there has been no requirement to modulate fees. However, circumstances have changed with the new German Packaging Act (VerpackG). Section 21 of the Act requires that:<sup>138</sup>

- (2) When calculating participation fees, EPR-Organisations shall be obliged to create incentives for packaging manufacturers in order to:
  1. Promote the use of materials and combinations thereof which can be recycled at the highest possible percentage rate, taking into account the practice of sorting and recycling; and
  2. Promote the use of recyclates and of renewable raw materials

In order to provide the PROs with a uniform framework for the assessment of recyclability, the Central Packaging Register (Stiftung Zentrale Stelle Verpackungsregister) is required to work with the Federal Environment Agency to produce annual minimum standards.<sup>139</sup>

The Central Packaging Register and the Federal Environment Agency published a guidance document in November 2018 to inform PROs as to the likely form such a standard would take. Relevant stakeholders were involved in initial discussions as part of a group of experts, following which draft guidance was prepared. This was subject to a further round of consultation, before being finalised.

The basis for the recyclability assessment is the unfilled packaging as a whole. Separate consideration of each component is not permitted. The guidance notes that the following should be taken into account when determining recyclability:

- 1) The presence of sorting and recovery infrastructure on the national market;
- 2) Sortability and separability of the packaging and its components (if necessary proven by empirical examinations); and

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<sup>138</sup> Translation from a presentation from Matthias Klein of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (2019) Reducing Fees through Better Recyclability: Modulated Fees in the New German Packaging Act, 2 April 2019

<sup>139</sup> Translation from Stiftung Zentrale Stelle Verpackungsregister (2018) Orientierungshilfe zur Bemessung der Recyclingfähigkeit von systembeteiligungspflichtigen Verpackungen, 30.11.2018

- 3) No incompatibilities of packaging components or substances that can hinder recycling (e.g. coatings, insoluble adhesives etc.).

In terms of the definition of recyclability, the guidance states that:<sup>140</sup>

*In contrast to the recycling concept of the KrWG, recyclability in this document always refers to high-quality and material recycling. This recyclability is the fundamental and gradual eligibility of a package to substitute virgin material in typical materials applications after undergoing industrially available recovery processes.*

The guidance provides the following details in terms of the factors to be taken into account when determining recyclability:

- Presence of sorting and recovery infrastructure:
  - If the packaging is described as being a ‘good material for recycling’ in the table in Annex 1 of the guidance document (taking account of any exclusion noted in the table), appropriate sorting and high quality material recycling infrastructure is available.
  - If the packaging does not obtain such a description, the packaging is considered to be non-recyclable given current practices
- Sortability and separability:
  - For the assessment of recyclability, the sortability by means of sensor-based detection must be taken into account for the following materials: glass, plastics (except for the film fraction), liquid paperboard and paper / lightweight cardboard. In this case, an empirical test is only required if one of the exclusion criteria noted in Annex 2 of the guidance is applicable. By way of example, an empirical test is required for plastic packaging with any of the following attributes:
    - Large area of labelling (>50% of the surface) with ‘foreign’ material;
    - Full sleeve labelling;
    - Multilayer structure (except PE/PP-EVOH);
    - Dark colour design using carbon black-based dyes (also when used in inside layers); or
    - Different types of plastic on the front and back sides.
- Recycling incompatibilities:
  - The designation of packaging as recyclable requires that no material combinations or substances are used that will disrupt the recycling process. Annex 3 of the guidance provides the basis for identifying incompatibilities. Examples of some of the identified material-specific incompatibilities are as follows:

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<sup>140</sup> Translation from Stiftung Zentrale Stelle Verpackungsregister (2018) Orientierungshilfe zur Bemessung der Recyclingfähigkeit von systembeteiligungspflichtigen Verpackungen, 30.11.2018

- LDPE - non-water-soluble adhesives in combination with wet-strength labels; PA barrier layers, PVDC barrier layers, non-polymer (except SiOx / AlOx), non-EVOH barrier layers
- Dimensionally stable PE - Silicone components; Components of foamed non-thermoplastic elastomers; non-water-soluble adhesives in combination with wet-strength labels; PA barriers; PE-X components, PVDC barriers; Non-PO plastics of density <1 g / cm<sup>3</sup>
- Dimensionally stable PP - Silicone components; Components of foamed non-thermoplastic elastomers; non-water-soluble adhesives in combination with wet-strength labels; PA barrier layers; PVDC barrier layers 1; Non-PO plastics of density <1 g / cm<sup>3</sup>

In determining the material specific incompatibilities, the guidance references the following:

- PRE – Plastic Recyclers Europe Packaging Guidelines<sup>141</sup>
- COTREP - Comité Technique pour le Recyclage des Emballages Plastiques<sup>142</sup>
- CHI - Institut cyclos-HTP: Testing and testing of recyclability, requirement and evaluation catalog of the institute cyclos-HTP for EU-wide certification<sup>143</sup>
- EPBP - European PET Bottle Platform: Design Guidelines<sup>144</sup>
- RECOUP - Recycling Of Used Plastics Limited: Plastic Packaging - Recyclability By Design<sup>145</sup>
- PTS - Rimkus, A.: EU Ecolabel for Printed Materials - Criteria, Application and Fees, RAL gGmbH<sup>146</sup>
- INGEDE - INGEDE e.V. : INGEDE method 12 - Evaluation of the recyclability of printed products - Testing of the fragmentation behaviour of adhesive applications<sup>147</sup>

The guidance states that the outcome of the preceding steps would be the identification of the proportion of the packaging available for recycling. This might be defined on a metric or ordinal scale, and, as suggested by the guidance, could vary in detail from 0% to 100%, or in line with the following broad categories:

- No recyclable part;
- Slightly recyclable;

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<sup>141</sup> Available at <http://plasticsrecyclers.eu/downloads>

<sup>142</sup> Plastic Packaging Guidelines available at <https://www.cotrep.fr/content/uploads/sites/3/2019/02/cotrep-guidelines-recyclability.pdf>

<sup>143</sup> Available at [http://cyclos-htp.de/fileadmin/user\\_upload/Anforderungs-und\\_Bewertungskatalog\\_Version\\_3.5\\_Stand\\_03.08.2017.pdf](http://cyclos-htp.de/fileadmin/user_upload/Anforderungs-und_Bewertungskatalog_Version_3.5_Stand_03.08.2017.pdf)

<sup>144</sup> Available at <https://www.epbp.org/design-guidelines/products>

<sup>145</sup> Available at <http://www.recoup.org/p/130/recyclability-by-design>

<sup>146</sup> Available at <http://docplayer.org/19240631-Eu-ecolabel-fuer-druckerzeugnisse.html>

<sup>147</sup> Available at <https://www.ingede.com/ingindx/methods/ingede-method-12-2013.pdf>

- Moderately recyclable;
- Highly recyclable.

## A.4.0 Agricultural Film

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### A.4.1 Summary of Fee Modulation: Agricultural Film

Four existing agricultural plastic EPR schemes (France, Germany, Ireland, and Sweden), and one recently discontinued scheme (Andalusia), were reviewed. There is some variance between the schemes in terms of who fees are charged to and at what point they are collected. However, the features by which fees are modulated are relatively consistent. The majority of schemes use modulated fees, and modulate according to the end of life cost, in places referred to as the reverse value chain. This recognises that different agricultural plastics and applications incur different end of life costs owing to demand for secondary material, extent and likelihood of contamination, and their capacity to be recycled. In some schemes, this is a simple classification into groups – for example in Ireland fees are split into two categories. In other schemes, a more granular classification is used – for example in France, fees are adjusted for ten different product types.

At present, it seems as though EPR schemes for agricultural plastic are not utilising fees to incentivise use of certain materials or dissuade the use of others. The focus has been on ensuring that the varying end of life costs are covered accordingly. There is potential to modulate fees in future according to other factors. Modulation of fees by inclusion of recycled content was discussed with some interest from schemes. Such a measure could help to increase demand for secondary content within agricultural plastics, and improve the economies of recycling for these materials as a whole. This could be of particular benefit to the sector, with many of the schemes reporting difficulties in finding reprocessing capacity for their films following the Chinese import restrictions.

The use, and modulation of fees for biodegradable plastics was also discussed. Many of the schemes reflected that due to the nature of use of agricultural plastics in their country, there was little demand for biodegradable plastics and it was not something they were considering – this was the case in Sweden and Ireland. In France however, biodegradable mulch films are used and these are not subject to the eco-contribution. As such, an incentive exists for farmers to use these products. In addition, as they are not removed from the soil post-use, there is no collection fee to be paid and with the increased fee for mulch plastics in the scheme (as a result of Chinese restrictions) the benefit of using biodegradable mulches has increased. Resultantly, France has seen a 30% increase in demand for biodegradable mulch films in 2019.



## A.4.2 Existing Agricultural Film EPR Schemes

### A.4.2.1 France

#### Operation of the Scheme

At present, a voluntary system operates in France for the management of agricultural plastics. This scheme is supported by the French government who will consider legislative enforcement if the voluntary system fails. Under French regulations there are no specific take back obligations for agricultural plastics. Instead, producers, importers, and distributors of waste generating products may be required to provide for their appropriate management at end-of-life in accordance with EPR principles.<sup>148</sup> As agricultural plastics cannot be burnt, buried or landfilled in France, the French agri-plastics industry created a national voluntary EPR initiative.<sup>149</sup> This is managed financially by Comité français des Plastiques en Agriculture (CPA) and operationally by a private not-for-profit organisation called ADIVALOR.<sup>150</sup> It works on the premise of shared responsibility between the three economic actors; farmers, distributors, and producers.

ADIVALOR was created in 2001 under the direction of the French Association for the Crop Protection Industry. Its remit is to manage the collection, recycling and recovery of waste agri-supplies across France. The organisation originally collected plastic containers from obsolete pesticide products, but now collects a broad range of materials including plastic packaging and film. ADIVALOR started collecting film in 2009 under an agreement with Agriculture Plastic Environment (APE).<sup>151</sup> In 2019, ADIVALOR will extend the range of materials covered further and begin collection of flexible irrigation tubes and drip tapes.<sup>152</sup>

Once the agri-products have reached end-of-life, farmers return their plastic waste to one of around 6000 collection points across France.<sup>153</sup> Only products carrying the ADIVALOR logo are accepted, which reduces chance of contamination with non-target materials. ADIVALOR relies on support from distributors to organise the collection, storage and regrouping of waste (e.g. by organising collection logistics and providing labour). The Chambers of Agriculture network, and other professional organisations,

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<sup>148</sup> Environmental Code - Article L541 – 10

<sup>149</sup> Agriculture Plastic and Environment <http://www.plastiques-agricoles.com/agriculture-plastique-et-environnement-ape-commission-ape/>

<sup>150</sup> *France : A new scheme for recycling flexible irrigation tubes | European Irrigation Association*, accessed 30 April 2019, <http://irrigationeurope.eu/news/france-new-scheme-recycling-flexible>

<sup>151</sup> ADIVALOR Used Agriplastic Film [http://www.adivalor.fr/en/collectes/films\\_agricoles\\_usages.html](http://www.adivalor.fr/en/collectes/films_agricoles_usages.html)

<sup>152</sup> *France : A new scheme for recycling flexible irrigation tubes | European Irrigation Association*, accessed 30 April 2019, <http://irrigationeurope.eu/news/france-new-scheme-recycling-flexible>

<sup>153</sup> ADIVALOR presentation 2015

<http://www.srsweb.sk/dokumenty/6RLD/1%20den/04%20%20Presentation%20of%20ADIVALOR%20-%20EN.pdf>

support distributor activities by co-ordinating and publicising the collections to farmers.<sup>154</sup>

## Fee Structure

The collection and treatment of the waste that ADIVALOR manages is largely funded by manufacturers and suppliers. They are charged an 'eco-fee' when they place products on the French market, for producers of agricultural film this is collected by Agricultural Plastics Europe (APE). Products are labelled with the ADIVALOR logo so that future buyers are aware of the producer's commitment to environmental management, and so that they can be recognised at the point of collection.

The fee differs depending upon the material, ranging from 65€ to 180€ per tonne placed on the market with modulation according to end-of-life costs. The fees as they stood in 2018 and as set for 2019 are shown in Table A 6. These fees work out to be between 1-7% of the product cost. The higher fees are principally charged for agricultural mulch films due to their high levels of contamination – largely with moisture and soil. However, even this higher fee does not fully cover the reprocessing cost, and it may cost up to twice the current fee to recycle these films. This is due to the Chinese National Sword restrictions which resulted in a rapid increase in operational and logistical costs for agricultural films in a short time. The scheme is in the process of increasing the eco-contribution to balance the accounts by 2020.<sup>155</sup>

To combat challenges with films, APE are working on a range of solutions including advanced contamination removal and research into the thicker film gauges which can reduce contamination in the films collected. Additional funding from the French Environment and Energy Management Agency is providing €2.8m of support over 5 years to help in the implementation of the recovery scheme for agricultural films.<sup>156</sup> Lower fees are charged for materials such as greenhouse plastics as these generally have a higher value at end of life as the plastic used has a higher value and is also cleaner than products which are used in direct contact with soil.

Farmers are not usually charged for returning their materials to the collection points, hence, there is no financial incentive for farmers to minimise weight based contamination. However, this has changed recently for mulch film disposal which farmers are now required to pay for, and which is explained in greater detail in the sections that follow.

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<sup>154</sup> ADIVALOR Who does what? [http://www.adivalor.fr/en/filiere/presentation/qui\\_fait\\_quoi.html](http://www.adivalor.fr/en/filiere/presentation/qui_fait_quoi.html) Date accessed 10/10/17

<sup>155</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE) , May 2019

<sup>156</sup> ADIVALOR 2014 Report [http://www.adivalor.fr/en/adivalor/2014\\_report.html](http://www.adivalor.fr/en/adivalor/2014_report.html)

**Table A 6: Modulation of Fees – France<sup>157</sup>**

Product	Eco-Contribution – 2018 (/T)	Eco-Contribution – 2019 (/T)
Greenhouse	65€	65€
Semi-forcing	80€	80€
Mulching Films	160€	180€
Direct cover (carrot film)	160€	180€
Silage	80€	90€
Round bales films	80€	110€
Twine	90€	90€
Net	130€	130€
Anti-hail net	0.006€/m <sup>2</sup>	0.006€/m <sup>2</sup>
Irrigation flexible pipes	75€	75€

As with many of the EPR schemes, the French scheme has come under pressure following restrictions placed on export of recyclables to Asia.<sup>158,159</sup> Following the closure of a major export route, Adivalor says that supply is far outstripping demand for PE agricultural films which compete with less contaminated film from packaging and construction. In part, this forms the rationale for the increased fees for film based agricultural plastics in 2019. At present, these materials are being collected for landfill and the increased costs of disposal have contributed to the fee increase. To help balance funding of the system, farmers have been charged a contribution of 125€/tonne for disposal of mulch films.<sup>160</sup>

<sup>157</sup> Paul Cammal, APE Europe, and CPA (2018) *Eco-contribution 2018*, 2018, [http://www.plastiques-agricoles.com/wp-content/uploads/2018/10/Ecocontribution\\_letter\\_20181024.pdf](http://www.plastiques-agricoles.com/wp-content/uploads/2018/10/Ecocontribution_letter_20181024.pdf)

<sup>158</sup> WRRRA (2018) Comprehensive list of Banned Materials under National Sword

<sup>159</sup> Plastics information Europe (2018) *Crisis situation for agrifilms recycling in France / Weak demand for recyclates / Price pressure on rPE*, November 2018, <http://www.plastiques-agricoles.com/wp-content/uploads/2018/11/PIE-Plastics-Information-Europe-RECYCLING.pdf>

<sup>160</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE), May 2019

## System Performance

APE Europe estimates that in 2016, 98% of agricultural plastics in France were *collected* with most of the collected material sent for recycling.<sup>161</sup> As mentioned previously, the scheme came under some pressure following the knock-on impacts of the Chinese import restrictions and resulting reduced demand for certain secondary materials in Europe. Following this the recycling rate has decreased and is currently around 80%, with the decrease attributed to a lack of capacity for mulch films and nets in particular.<sup>162</sup> The collection rate is calculated via comparison of the tonnage of new products placed on the market with the weight of material collected. This is adjusted for expected contamination. The recycling rate adjusts the collection rate by that which is not recycled, with some materials being landfilled following the Chinese restrictions.

APE are aware of this and are looking to support innovative projects to create new capacity in Europe to allow these to be recycled, as well as looking at ways of cleaning mulch films post use to improve their performance in recycling. In part, this will work towards their target of sending no waste to landfill by 2025.<sup>163</sup> Further, they are encouraging producers to look at ways of incorporating greater amounts of secondary content into their product. They estimate that at present 20-25% of agricultural plastic is produced from recycled content in France, and are looking to increase this in the applications where it is feasible to.<sup>164</sup>

## Additional Considerations

The French scheme is looking to incentivise the use of recycled content in agricultural plastics where possible. It may be feasible to incorporate this into the fee modulation in the system and discussions are ongoing into how this could happen with APE Europe estimating that this could be a possibility by 2020.<sup>165</sup>

Biodegradable mulch films are used in French agriculture but are not subject to the eco-contribution. As such, they have a competitive advantage when compared to traditional mulch films which have a relatively high eco-contribution. In addition, farmers who are now paying for collection of conventional mulch films (following the Chinese restrictions) are not required to pay for biodegradables as they don't need to be collected. As such, their use is increasing and product volume used is up 30% in France in 2019.<sup>166</sup>

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<sup>161</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE) , May 2019

<sup>162</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE) , May 2019

<sup>163</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE) , May 2019

<sup>164</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE) , May 2019

<sup>165</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE) , May 2019

<sup>166</sup> Personal Communication with Bernard Le Moine, Agricultural Plastics Europe (APE) , May 2019

## A.4.2.2 Germany

### Operation of the Scheme

Germany has a voluntary scheme for collection and recovery of agricultural film plastics. The scheme, called ERDE, began collection of a selection of agricultural film types in 2015.<sup>167</sup> Its activities are funded by member companies who are manufacturers and importers of these products. ERDE's success is reliant on voluntary participation; currently there are eleven participating manufacturers – up from four when the scheme was started.<sup>168</sup> In addition, there are more than 20 collection partners listed on its website. The system covers silage sheets, underlayer films, silo tubes, silage stretch films and net replacement films.<sup>169</sup> There are plans in place to expand the range of materials covered by the scheme. In future, the scheme will cover plastics used for asparagus, for greenhouses and low tunnels, and mulch plastics.<sup>170,171</sup> Looking further ahead, the scheme may also look to cover non-woven agricultural plastics such as polypropylene fleeces. However, these are not widely used in Germany at present and hence not considered a priority.<sup>172</sup>

### Fee Structure: Fee to Farmers

The system is funded through collection fees to farmers, and fees to manufacturers for material placed on the market. RIGK, the system operator, organises the collection of used film across a network of collection points. Farmers bring their material to a collection centre and generally pay on a weight basis for this collection – by kilogram.<sup>173</sup> This fee varies between collection centres as it is designed to accurately reflect the cost of the reverse value chain and hence incorporates transport costs from different regions.<sup>174</sup> As such, the costs to farmers are market-driven. There is an incentive for farmers to return plastics through the scheme as the cost is lower than organising end of life management themselves, especially given the recent reduction in demand for LDPE and LLDPE films following the Chinese import restrictions. In addition, the fee structure creates an incentive for farmers to minimise contamination of their material as this will reduce the cost to them via a reduction in the weight of material charged. Further, at

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<sup>167</sup> RIGK *Crop Plastics Recycling Germany (ERDE) recycling - For the recovery of used plastics from the agricultural sector*, accessed 30 April 2019, <https://www.rigk.de/en/recovery-systems/recovery-systems-for-producer-and-packaging-companies/detail/crop-plastics-recycling-germany-erde-recycling/>

<sup>168</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>169</sup> RIGK *Crop Plastics Recycling Germany (ERDE) recycling - For the recovery of used plastics from the agricultural sector*, accessed 30 April 2019, <https://www.rigk.de/en/recovery-systems/recovery-systems-for-producer-and-packaging-companies/detail/crop-plastics-recycling-germany-erde-recycling/>

<sup>170</sup> APE Europe (2017) *APE Europe - ERDE meeting*, accessed 30 April 2019, <http://www.plastiques-agricoles.com/wp-content/uploads/2017/04/minutesAPEmeeting20170216.pdf>

<sup>171</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>172</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>173</sup> The system is a little more complex as in some regions the cost of collection is built into the price of agricultural plastics when purchased.

<sup>174</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

collection points there is also collection for plastics to be incinerated which are charged at a higher rate and which provides some incentive for the use of recyclable agricultural plastics. Finally, RIGK employ an overseer who travels to the collection points to ensure that the quality of the plastics, and the cleaning they have received is sufficient for recycling. This contributes to RIGK receiving clean streams of single materials, with minimal contamination.<sup>175</sup>

### Fee Structure: Fees to Manufacturers

At present, participating manufacturers and importers pay a fee per tonne of agricultural film placed on the market. This fee is then passed on to farmers in the purchase cost of products. The present level of the fee could not be disclosed as it is commercially sensitive information, however the fee is the same for LLDPE and LDPE films which are the two polymers covered by the scheme at present.<sup>176</sup> The calculation of the fee is based on the reverse value chain for the material collected, including costs associated with collection and any revenue from recycling or potential cost due to incineration.<sup>177</sup> This is important as in future the scheme may expand to include materials which have non-recyclable components and the fee for these would incorporate the additional cost incurred at end of life.<sup>178</sup> As such, there is some incentive in the scheme for manufacturers to design materials in such a way as to minimise end-of-life costs – through ensuring recyclability or by generating demand for secondary materials. The fee is passed on to farmers in the material price when purchased.

### Scheme Performance

According to RIGK, ERDE collected 13,000 tonnes of agricultural film in 2018. This is a major increase from the reported collection of 5,412 tonnes of agricultural film in 2016 and represents a collection rate of ~25% for 2018.<sup>179</sup> The collection rates achieved are lower than those reported in some of the other agricultural plastic EPR schemes but there are plans to continue expanding the range of materials covered and the network of collection points.<sup>180</sup> Furthermore, a high proportion (>90%) of the material collected is recycled due to the measures taken to minimise contamination and collect single streams of material.<sup>181</sup> A collection target of 17,000 tonnes has been set for 2019, rising to 25,000 tonnes in 2020.<sup>182</sup>

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<sup>175</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>176</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>177</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>178</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>179</sup> *AGRICULTURAL FILM RECYCLING: German initiative increases collection volume by almost 17% | Plasteurope.com*, accessed 13 May 2019,

[https://www.plasteurope.com/news/AGRICULTURAL\\_FILM\\_RECYCLING\\_t236996/](https://www.plasteurope.com/news/AGRICULTURAL_FILM_RECYCLING_t236996/)

<sup>180</sup> APE Europe (2017) *APE Europe - ERDE meeting*, accessed 30 April 2019, <http://www.plastiques-agricoles.com/wp-content/uploads/2017/04/minutesAPEmeeting20170216.pdf>

<sup>181</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

<sup>182</sup> Personal Communication, Industry Stakeholder, 13<sup>th</sup> May 2019

A separate RIGK service, FOLIO and NETTI, covers bale nets and yarn, crop forcing film and fibrous webs.<sup>183</sup>

### Additional Considerations

Biodegradable plastics are not widely used in Germany as they are not used in silage wrap and sheeting. Products such as silage wrap, netting, sheeting and twine are usually used within a year of application but may not be used for 2-4 years. As such, biodegradable plastics may start to degrade before the fodder is used. Any consideration for recycled content in products would have to be agreed by all producers but the system operator recognises that generating demand for recycled plastics would be a positive thing.

#### A.4.2.3 Ireland

Ireland has an extended producer responsibility system and recycling targets for agricultural plastics. In 1997, Ireland introduced legislation specifically designed to assist and promote the recycling of agricultural plastics. The scope of this scheme covers silage wrap, bags, sheeting and since the 1<sup>st</sup> of October 2017, netting and twine. Packaging agricultural plastics, such as feed and fertiliser bags and drums, are also covered by EPR in Ireland. Producers of these materials pay fees to Repak, who provide a subsidy to Farm Plastic Recycling CLG for their services in collection and recycling of these materials.<sup>184</sup>

#### Operation of the Scheme

Under the Waste Management (Farm Plastics) Regulations (1997, revised 2001) a producer of farm plastics must either become directly involved in the recovery of farm plastic waste from consumers through offering a Deposit Return System (DRS) or participate in a collection or recovery scheme operated by the Irish Farm Film Producers Group (IFFPG).<sup>185</sup> At present, all producers are members of the IFFPG which is Ireland's sole approved farm plastic recycling compliance scheme and there are no deposit return systems in place.

The IFFPG scheme operates as follows:

- Producers must pay a levy to the IFFPG for every tonne of farm plastic they supply to the Irish market (failure to do so is illegal).
  - In 2016, the levy stood at €110 per tonne (excl. VAT), and has risen to €140 per tonne (excl. VAT) in 2019.
- All farm plastic sold legally in Ireland is levied.

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<sup>183</sup> *Successful start for the initiative "Erntekunststoffe Recycling Deutschland" (ERDE)*, accessed 30 April 2019, <https://www.erde-recycling.de/en/press-media/current-information/successful-start.html>

<sup>184</sup> Personal Communication with an Industry Representative, May 2019

<sup>185</sup> Irish Farm Film Producers Group <http://www.farmplastics.ie/farm-plastic-regulations/> Date accessed 08/05/19

- When farmers purchase levied plastic, they are provided with a code which qualifies them for a significant reduction in collection fees for the plastic at end of life (Table A 7).
- Farmers are obliged to correctly dispose of their farm plastics; it is illegal to burn or bury farm plastic in Ireland.
  - The IFFPG arranges the collection and recycling of farm plastics across Ireland, either through local one-day bring-centres, or individual farm collection.
  - Farmers are charged a weight based collection fee on all the plastic they discard. This varies by the type of material – in 2018 bale netting and twine could be recycled at a cost of €5 per half-tonne bag, whereas silage wrap and sheeting are collected loose and charged at €15 per half tonne.<sup>186</sup> These charges are set to increase in 2019 – (see Table A 8).
  - The vast majority of plastic is returned via the bring-centres (92% of the total tonnage collected in 2016), likely due to the cheaper collection fees.

The IFFPG does not have statutory powers, but has appointed a Compliance Officer who supports local authorities to enforce farm plastic regulations.

### Fee Structure

The scheme is funded by producer contributions when material is placed on the market, and by fees charged to farmers at the point of recycling. All producers placing agricultural plastics on the Irish market are required to contribute to end-of-life costs and the IFFPG is the only producer organisation for agricultural plastics in Ireland. There are no de-minimis thresholds, and producers or importers placing product on the market without paying can be reported with the system enforced by local authorities. The costs of the scheme increased in 2019, following closure of the Chinese market and associated reduction in demand for agricultural plastics.<sup>187</sup> The system fees are shown in Table A 7 and Table A 8.

**Table A 7: Irish Agricultural Plastic Fees for Collection<sup>188</sup>**

Product	2018 – Bring Centre	2018 – Collection	2019 – Bring Centre	2019 - Collection
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<sup>186</sup> Agriland Team (2018) *How many tonnes of silage plastic have been recycled in 2018?*, accessed 30 April 2019, <http://www.agriland.ie/farming-news/how-many-tonnes-of-silage-plastic-have-been-recycled-in-2018/>

<sup>187</sup> O'Brien, B. (2019) *Why is it going to cost more to recycle farm plastic this year?*, accessed 30 April 2019, <http://www.agriland.ie/farming-news/why-is-it-going-to-cost-more-to-recycle-farm-plastic-this-year/>

<sup>188</sup> This table represents the costs to farmers who provide a label code proving that they purchased levied plastics.



<b>Silage Wrap/Sheeting</b>	€15 /half tonne (by weight)	€40 /half tonne	€20 /half tonne (by weight)	€45 /half tonne
<b>Bale netting/twine</b>	€5 /half tonne (bag)		€10 /half tonne (bag)	

**Table A 8: Irish Agricultural Plastics, Producer Fees**

<b>Product</b>	<b>2018 - POM</b>	<b>2019 - POM</b>
<b>All</b>	€110 /tonne	€140 /tonne

As shown in Table A 7 fees are set by weight for producers with no differential between the type of product, and by weight and by product type (between bale netting and twine, and silage wrap and sheeting) for farmers on delivery to collection centres. Half tonne units are used as this is the quantity that farmers are likely to bring to collection centres. Initially, the scheme only collected silage wrap and sheeting, introducing collection for netting and twine in 2017. In part, these materials are collected separately to prevent them from contaminating the wrap and sheeting fraction.<sup>189</sup> The scheme is looking to change from using bag-based collection for these materials to charging by weight in future. This is as the quantity of netting and twine collected is increasing in Ireland, up 30% in early 2019 compared to 2018 figures.<sup>190</sup> Interestingly, the cost of managing netting and twine is higher for the scheme than for wrap and sheeting as these materials are sent to energy recovery at present.<sup>191</sup> At the moment this is not reflected in the farmer or producer fees.

Following the impact of changes in Chinese legislation the IFFPG are looking at options for a fee structure which increase demand for recycle. This is as the demand for agricultural plastics for recycling has decreased since China restricted its intake and European reprocessors have become inundated with supply. In future, the IFFPG will consider incorporating fee modulation based on the proportion of recycled content included in the product to generate demand for secondary material and reduce the environmental impact of agricultural plastics.<sup>192</sup> However, it is worth recognising that this may not be feasible for all agricultural applications. Pit covers are a suitable product

<sup>189</sup> Personal Communication with an Industry Representative, May 2019

<sup>190</sup> Agriland Team (2019) *Farmers are recycling more and more farm plastics at reduced prices*, accessed 9 May 2019, <http://www.agriland.ie/farming-news/farmers-are-recycling-more-and-more-farm-plastics-at-reduced-prices/>

<sup>191</sup> Personal Communication with an Industry Representative, May 2019

<sup>192</sup> Personal Communication with an Industry Representative, May 2019

where this could be feasible due to their thick gauge and the fact that they are not stretched like other agri-plastics. It may be possible to also incorporate *some* recyclate into silage wrap, however IFPPG members have some concerns regarding quality if using recyclate in a premium product. For netting and twine, there are no recycling facilities in Europe at present for these wastes, so whilst they are a suitable application for recyclate there is none available at present.<sup>193</sup>

### Scheme Performance

In 2016, the IFPPG collected 27,193 tonnes of farm plastics waste, which was a ~2000 tonne increase on the previous year.<sup>194</sup> The adjusted farm plastic recycling rate for 2016 was 74%, and in 2018 rose to a high of 77% recycling for wrap and sheeting.<sup>195</sup> As such, the scheme exceeds the target of 70% recycling set by the Department of Communications, Climate Action and Environment.

Recycling rate is calculated based on the quantities of agricultural plastics placed on the market in the previous year – as detailed by producer figures. The amount collected and sent to recyclers is assessed, and adjusted down by 50% to allow for contamination in the material - largely made up of moisture. This figure has been decided based on discussion with reprocessors, and represents the average contamination by weight experienced.<sup>196</sup> Weight based costs to the farmer provide some incentive for them to minimise major sources of contamination such as tyres contained within pit-linings or pieces of concrete. However, the incentive is not felt to be large enough for farmers to undertake more labour intensive processes of thorough washing and drying of materials.<sup>197</sup>

### Additional Considerations

Biodegradable plastics are not widely used in Ireland's agriculture. This is as they not suitable for fodder crops. Products such as silage wrap, netting, sheeting and twine are usually used within a year of application but may not be used for 2-4 years. As such, biodegradable plastics may start to degrade before the fodder is used. There is a small amount of crop farming in Ireland where these plastics may be used but they are unlikely to be incentivised via the IFPPG scheme.<sup>198</sup>

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<sup>193</sup> Personal Communication with an Industry Representative, May 2019

<sup>194</sup> IFPPG (2017) *Environmental Report 2016*

<sup>195</sup> Personal Communication with an Industry Representative, May 2019

<sup>196</sup> Personal Communication with an Industry Representative, May 2019

<sup>197</sup> Personal Communication with an Industry Representative, May 2019

<sup>198</sup> Personal Communication with an Industry Representative, May 2019

#### A.4.2.4 Spain (Andalusia)

Until 2018, producers of agricultural plastic in Spain's autonomous region of Andalusia were legally required to participate in a management system guaranteeing the collection and treatment of waste generated.<sup>199</sup>

The regional government of Andalusia previously authorised Cicloagro, a public private partnership, to help producers meet their environmental obligations. However, in 2016 their involvement ceased.<sup>200</sup> This followed a Supreme Court ruling in 2016 on the Regulation of Residues of Andalusia of 2012. The ruling was that Autonomous Communities lack the competences to regulate waste management systems based on extended producer responsibility without specific state level regulation. As such, it was unlawful for Andalusia to regulate waste management separately, without legislation in place at a national level in Spain. This meant that the Andalusian EPR system was nullified, and Cicloagro's contract was not renewed.<sup>201</sup> Spain is looking at development of national EPR for agricultural plastics instead, but there is no legislation in place at present.

#### Operation of the Scheme

Whilst operating, Cicloagro covered non-packaging agricultural plastics such as mulch films, irrigation tubes and tapes, greenhouse and tunnel plastic and netting. In 2016, it reported processing 39,668 tonnes of material, 38% of which was mulch film.<sup>202</sup> The scheme was financed by an 'eco-protection' tax levied on the sale of plastic agricultural products. Farmers delivered sorted and cleaned agricultural plastics to authorised collection points for recycling – no charge is paid by the farmers at this point. Collection points were provided across the region by Cicloagro and partner companies, splitting the region into ten areas in each of which a plastic management company ran the scheme.<sup>203</sup> The scheme collected both transparent and black plastic films from across the region, with the black films widely used for crop insulation in the winter months. Whilst operating, a recycling rate of ~80% was reported in the region.<sup>204</sup>

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<sup>199</sup> As set out in Decree 73/2012 (Waste Regulation of Andalusia)

<sup>200</sup> Press, E. (2018) *Cicloagro cesa su actividad como sistema colectivo de gestión de plásticos agrícolas en Andalucía*, accessed 30 April 2019, <https://www.europapress.es/andalucia/noticia-cicloagro-cesa-actividad-sistema-colectivo-gestion-plasticos-agricolas-andalucia-20180419161643.html>

<sup>201</sup> Press, E. (2018) *Cicloagro cesa su actividad como sistema colectivo de gestión de plásticos agrícolas en Andalucía*, accessed 30 April 2019, <https://www.europapress.es/andalucia/noticia-cicloagro-cesa-actividad-sistema-colectivo-gestion-plasticos-agricolas-andalucia-20180419161643.html>

<sup>202</sup> *Cicloagro adds collection centers for agricultural plastic films*, accessed 1 May 2019, <https://www.recyclingtodayglobal.com/article/spanish-province-adds-plastic-ag-film-collection-sites/>

<sup>203</sup> (2018) *Un sistema de responsabilidad ampliada del productor para los plásticos agrícolas*, accessed 9 May 2019, <https://www.residuosprofesional.com/andalucia-responsabilidad-ampliada-plasticos-agricolas/>

<sup>204</sup> Personal Communication with Isabel Goyena García-Tuñón, Director General of Cicloplast, May 2019

## Fee Structure

Details of the exact fees paid by producers are not available as these are confidential and the scheme is no longer active.<sup>205</sup> However, it is understood that the material value of the agricultural plastics at end of life was sufficiently high so as to fund the collection and reprocessing of these materials. Farmers would generally be paid for their higher value agricultural plastics, and may have paid a small fee in the region of 2-3€/tonne for mulch plastics to be collected.<sup>206</sup> As such, the producers in the scheme were not required to fund end of life costs as these were covered by material value. This system worked due to the abundance of higher value greenhouse plastics used in Andalusia, and due to being in place prior to the Chinese restrictions which resulted in a decrease in the value of mulch plastics at end of life.<sup>207</sup>

As such, the fee producers paid was minimal as it funded only the operating costs of the scheme. The costs were split between producers based on the quantity of material they placed on the market, with running costs of the scheme approximately 80,000€/annum.<sup>208</sup> There was no adjustment of fee relative to the type of material placed on the market.

## National EPR for Agricultural Plastics

Going forwards, Spain is looking to develop a national EPR system for agricultural plastics. Cicloplast has been in communication with the processors and producers for agri-plastics in Spain with an aim to develop a voluntary agreement based EPR system similar to those operating in Germany and France. Such a scheme would look to eventually cover the same range of materials which were covered in Andalusia: Mulch plastics, greenhouse plastic, tunnels, irrigation pipes, and netting. However, the scheme would likely start progressively – initially focussing on mulch plastics which are considered most difficult to ensure responsible management of and would expand over time to cover the range of materials required.

It is recognised that the fee structure for such a scheme would be different to the scheme as operated in Andalusia. This is as the end-of-life costs for the different materials vary significantly, especially since the Chinese import restrictions which have impacted the end of life costs for lower value fractions such as mulch plastics. In addition, whilst Andalusia uses a large proportion of greenhouse plastics which have a higher value at end of life, these are not as common across the rest of Spain. Consideration could be given to the ease of collection and reprocessing at end of life, with higher fees for those materials which are more difficult to remove from soils. For mulch plastics, this might encourage a thicker gauge to minimise breakage and release to

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<sup>205</sup> Press, E. (2018) *Cicloagro cesa su actividad como sistema colectivo de gestión de plásticos agrícolas en Andalucía*, accessed 30 April 2019, <https://www.europapress.es/andalucia/noticia-cicloagro-cesa-actividad-sistema-colectivo-gestion-plasticos-agricolas-andalucia-20180419161643.html>

<sup>206</sup> Personal Communication with Isabel Goyena García-Tuñón, General Manager of Cicloplast, May 2019

<sup>207</sup> Personal Communication with Isabel Goyena García-Tuñón, General Manager of Cicloplast, May 2019

<sup>208</sup> Personal Communication with Isabel Goyena García-Tuñón, General Manager of Cicloplast, May 2019

soil. It is understood that at present, low collection rates of agricultural plastics result in them (in places) being disposed of irresponsibly, or left on land.<sup>209</sup>

Finally, consideration to minimising free-riding is thought to be important when developing a scheme for Spain – given the variance in value of the different materials at end of life and associated potential for cherry-picking. Waste collectors could seek to only collect the higher value plastics which will generate revenue as secondary materials, however all agricultural plastic will need to be collected and managed including mulch films which may have a negative value at end of life at present. To prevent this, some form of legislation which ensures traceability of material flows would be valuable.

#### A.4.2.5 Sweden

##### Operation of the Scheme

SvepRetur run a collection and recycling scheme for agricultural plastics in Sweden.<sup>210</sup> Established in 2001, SvepRetur is an industry owned, not-for-profit association, responsible for managing the disposal of agricultural plastic waste, including films, bags, and drums. Industry participation is voluntary. The scheme is managed by producers and is accountable to the Swedish Environmental Protection Agency (EPA). Despite the voluntary nature, it is thought that all major importers and producers of agricultural plastics are members of the scheme.<sup>211</sup> In 2015, SvepRetur commissioned Kretslopp & Recycling in Sweden AB (KRSAB), to manage the nationwide collection of agriplastics until 2020.<sup>212</sup>

Agricultural plastics are collected twice a year, once in spring and once in autumn, and collection points are provided in each Swedish county. Farmers bring their used plastics to these locations with the network organised such that each farmer should not have to transport their waste more than ~20km.<sup>213</sup> The exception to this is in the North of Sweden where farmers may have their waste plastics collected from them due to the transport distances involved. The collection points are manned, to ensure that farmers have cleaned and sorted the plastics adequately. This follows issues in the early years of the scheme with high levels of contamination and debris included alongside plastics collected for recycling.

##### Fee Structure

Collection is funded through a recycling levy built into the price of participating products. The levy is equivalent to the actual cost of collection and recycling, and is based on the

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<sup>209</sup> Institute for European Environmental Policy (2018) *Plastic Pollution in Soil*, 2018

<sup>210</sup> *Svepretur – a simple recycling solution*, accessed 30 April 2019, <http://svepretur.se/en/>

<sup>211</sup> Personal Communication with Gert Jepsson (SvepRetur), May 2019

<sup>212</sup> *Krsab » Lantbruksplast*, accessed 30 April 2019, <http://krsab.nu.preview.binero.se/lantbruksplast/>

<sup>213</sup> Personal Communication with Gert Jepsson, (SvepRetur) May 2019

product type and size/weight. For PE films, this levy is 61€/tonne.<sup>214,215</sup> With the improvement of sorting and cleaning technologies, the cost of the levy has fallen with KRSAB stating that it has halved since 2001.<sup>216</sup> As such, this cost is built into the price which farmers pay for agricultural plastics. A full list of the fees are shown in Table A 9, with it worth noting that the fee varies by product and type of material. This is linked to the costs associated with the material at end of life. For example, pesticide containers are incinerated due to risks associated with contamination and hence incur a gate fee which is passed through the system. Equally, permeable material for covering vegetables is more expensive because it is more problematic to take care of at end of life, when compared to PE hay and silage wrap.

**Table A 9: Fees for Agricultural Plastics - Sweden**

Material	Fee (EUR/tonne)
PE - Stretch Film	61.1
PE – Silage Sacks	61.1
PE – Nets	61.1
PE – Clamp Silo Foil	61.1
PE – Tube for bags	61.1
PE – Other PE	61.1
PP/PE – Sacks, PP outer, PE inner	70.5
PP – Synthetic Yarn	70.5
Thin plastic containers	136.3
PP – Permeable plant growing cover	155.1

Fees collected from the recycling levy in one year are used to fund collection and treatment of plastics collected in the following year. As such, it is in the interests of the producers to ensure that all those placing agricultural plastics on the Swedish market are signed up to the scheme and charge the recycling levy. By minimising free-riding in the system the costs are kept relatively low.<sup>217</sup>

<sup>214</sup> Svepretur – atervinningsavgift 2017

<http://svepretur.se/wp-content/uploads/atervinningsavgift-2017-Eng.pdf>

<sup>215</sup> SvepRetur SvepRetur - Recycling Fees 2019, <https://svepretur.se/wp-content/uploads/%C3%85tervinningsavgift-2019.pdf>

<sup>216</sup> Krsab » Lantbruksplast, accessed 30 April 2019, <http://krsab.nu.preview.binero.se/lantbruksplast/>

<sup>217</sup> Personal Communication with Gert Jepsson (SvepRetur), May 2019

## Scheme Performance

Targets are set for collection and recycling of agricultural plastics with an aim for 70% collection of used farm plastic, and 30% material recycling.<sup>218</sup> In 2014, the collection rate of agricultural plastics was 85% with 89% of the collected material being recycled.<sup>219</sup> The performance has increased since with estimated collection rates for 2018 at ~90% with ~90-95% of this being recycled.

In part, this high collection rate may be due to the financial incentive for farmers to deliver their waste material. The alternative disposal option would be for them to take the plastics to a community waste centre where they would pay a fee for its disposal. As there is no fee for collection through the EPR system and collection centres are provided within a short distance from farms it makes financial sense to farmers to have their used plastics managed through the scheme.<sup>220</sup>

## Additional Considerations

Biodegradable plastics are not widely used in Sweden, similar to the situation in Ireland. As such, these are unlikely to be incentivised via the SvegRetur scheme.<sup>221</sup>

As with many of the agricultural plastic schemes, Sweden was previously reliant on China for receiving some exports of agricultural plastic. The scheme experienced some difficulties following the national sword restrictions but is now building a recycling facility in the South of Sweden which will reprocess much of the collected material domestically.<sup>222</sup> This facility is due to become active in autumn 2019, and in the meantime, reprocessing facilities in Poland have been used.

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<sup>218</sup> Krsab » Lantbruksplast, accessed 30 April 2019, <http://krsab.nu.preview.binero.se/lantbruksplast/>

<sup>219</sup> APE (2014) *APE Europe - General Meeting*, 2014

<sup>220</sup> Personal Communcation with Gert Jepsson (SvegRetur), May 2019

<sup>221</sup> Personal Communcation with Gert Jepsson (SvegRetur), May 2019

<sup>222</sup> BIR - Bureau of International Recycling (2018) *China Trade: National Sword 2018 and Review of changes to China's Import Controls*, accessed 19 June 2019, <https://bir.org/news-press/latest-news/china-trade-national-sword-2018-and-review-of-changes-to-chinas-import-controls/>

### A.4.3 Summary Tables

The following tables summarise the key features of the EPR schemes discussed.

**Table A 10: Summary Table - Recycling Rates by Scheme**

<b>EPR scheme</b>	<b>Voluntary/Mandatory</b>	<b>Year Established</b>	<b>Collection/Recycling rate (year)</b>
<b>France</b>	Voluntary	2001 (Collecting film since 2009)	98% (Collection, 2016)
<b>Germany</b>	Voluntary	2015	25% (2018, Collection)
<b>Ireland</b>	Mandatory	1997 (Revised 2001, 2017)	77% (2018, Recycling)
<b>Spain</b>	Mandatory (Andalusia only)	2012 (ceased in 2016)	80% (2016, Recycling – estimated)
<b>Sweden</b>	Voluntary	2001	90% (2018, Estimated Collection)



**Table A 11: Summary Table of Fees by Scheme**

EPR scheme	Factors used for determining fees	Charge to Farmer at Collection	POM Fee to Producer
<b>France</b>	Based on end-of-life costs. Charged by material type and weight.	Only for mulch films - €125/tonne	Yes -€65—€180 per tonne depending on material
<b>Germany</b>	Based on the reverse value chain. Charged by material/weight.	Yes – however lower than the cost of other disposal routes	System fees are confidential
<b>Ireland</b>	For farmers: differentiated between two material groups, charged by weight.  For producers: charged by weight only.	Yes - 10€ - 45€ /half tonne depending on material (2019)	Yes - 140€/tonne for all materials
<b>Spain</b>	Producer contributions based on market share, producers pay a quota of system running costs depending on their size.	No	Yes
<b>Sweden</b>	Estimated of cost of collection and recycling, charged by weight.	No	~60-150€/tonne depending on the material

## A.5.0 Fishing Gear

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### A.5.1 Summary: Fee Modulation for Fishing Gear

At present, the schemes which exist for collection and recycling of fishing gear are not 'typical' extended producer responsibility schemes. Given the value of fishing gear at end of life, the schemes do not charge producers a fee for gear placed on the market, generally being financed by the revenue generated from recycling. The cost of logistics in Iceland and Norway is covered by the fishing vessel owners with vessel staff responsible for cleaning and sorting gear and vessel owners covering the cost of transport to a reprocessor – although in some instances reception facilities are provided in ports. As such, there is no fee modulation in the schemes as presently run. For Iceland, if the recycling targets are not met the scheme may be legislated under an advanced disposal fee in future. At this point, the scheme would look at modulating fees for gear. It is possible that design for recycling, and inclusion of recycled content could be features that gear could be modulated by in future. However, polyamide (nylon) is well recycled and makes up much of fishing gear so it may be that little fee modulation is required.

### A.5.2 Background

Two schemes exist for collection and recycling of fishing gear, one in Iceland, and one which originated in Norway and now covers a number of European countries. These schemes are similar to extended producer responsibility but have not been developed in the same way as EPR schemes for other sectors. Given the value of secondary materials obtained from end-of-life fishing gear, these schemes do not charge producer contributions for quantities placed on the market as in EPR schemes in other sectors. Primarily, schemes for fishing gear operate in the countries with the largest fisheries production.<sup>223</sup> The scheme in Iceland is managed by the Federation of Icelandic Fishing Vessel Owners and Fish Processing Plants (SFS).<sup>224</sup> Norsk Fiskeriretur AS (Nofir AS) was established in Norway in 2008, and has since expanded to collect fishing gear from other countries in Europe – including the Netherlands, Scotland and Greece.

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<sup>223</sup> European Commission (2016) *Fishing quotas*, accessed 7 May 2019, [https://ec.europa.eu/fisheries/cfp/fishing\\_rules/tacs\\_en](https://ec.europa.eu/fisheries/cfp/fishing_rules/tacs_en)

<sup>224</sup> This represents a merger of two previous associations in Iceland's fishing industry - The Federation of Icelandic Fishing Vessel Owners (LÍÚ) and the Federation of Icelandic Fish Processing Plants. The new combined organisation (SFS) was founded in 2014.

## A.5.3 Norway

### Operation of the Scheme

The NoFir (Norwegian fishery recycling) project was established in 2008 to collect and recycle discarded fishing gear in Norway and has expanded significantly since its establishment (see Figure A 5).<sup>225</sup> Starting from Norway, the scheme now collects and recycles discarded equipment from fishing and aquaculture around Europe and in Turkey. The material collected is transported to facilities in Lithuania or Turkey where it undergoes dismantling and preparation for recycling. The prepared materials are then recycled in European or Asian facilities, depending on the material type.<sup>226,227</sup> For example, Aquafil facilities in Slovenia process nylon collected from fishing nets.<sup>228</sup> The secondary material, Econyl, is incorporated into new products such as clothes, furniture and carpets.<sup>229</sup>

Nets must be washed and disinfected before collection and other types of gear can be collected as they are. The fractions containing nylon or metals have a positive market value, with nylon making up the majority of gear collected. NoFir have regional collection facilities established in Norway and fishermen or ports can also request collections of gear via the NoFir website once they have amassed a certain quantity.

Following initial operations in Norway, NoFir received EU funding (€680k) under the Eco-Innovation Programme to expand its operations into other Member States, calling the project EUfir.<sup>230,231</sup> Expanding the project was challenging due to the lower tonnages of waste fishing gear generated in other countries and the greater transport costs involved (see Figure A 5 for relative quantities). Norway's large fishing industry had meant that a large quantity of waste was being generated in a relatively small area, resulting in low transport and collection costs relative to yields. The fishing and aquaculture industry is more widely distributed elsewhere in the EU, making the costs higher per tonne of fishing gear collected. Net dismantling facilities were established in Turkey to manage

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<sup>225</sup> Ove D. Jakobsen, and Øystein Nystad (2010) *Collaborative Waste Management*, 2010

<sup>226</sup> *About Us - NoFir - Recycling discarded equipment from fishing and fish farming.*, accessed 7 May 2019, <https://nofir.no/about-us/>

<sup>227</sup> *Nofir Nofir AS - Bodø - Se Regnskap, Roller og mer*, accessed 27 July 2015, <http://www.proff.no/selskap/nofir-as/bod%C3%B8/avfallsbehandling-og-gjenvinning/Z0IAV7GS/>

<sup>228</sup> *How abandoned fishing nets are recycled into nylon*, accessed 22 May 2019,

<https://www.recyclingtoday.com/article/abandoned-fishing-nets-recycled-into-nylon/>

<sup>229</sup> (2018) *Øistein og Nofir forvandler gammelt garn til nye badedrakter*, accessed 22 May 2019,

[https://www.an.no/iris-salten/industri/okonomi-og-naringsliv/oistein-og-nofir-forvandler-gammelt-garn-til-nye-badedrakter/s/5-4-907861?ns\\_campaign=article&ns\\_mchannel=recommend\\_button&ns\\_source=facebook&ns\\_linkname=facebook&ns\\_fee=0](https://www.an.no/iris-salten/industri/okonomi-og-naringsliv/oistein-og-nofir-forvandler-gammelt-garn-til-nye-badedrakter/s/5-4-907861?ns_campaign=article&ns_mchannel=recommend_button&ns_source=facebook&ns_linkname=facebook&ns_fee=0)

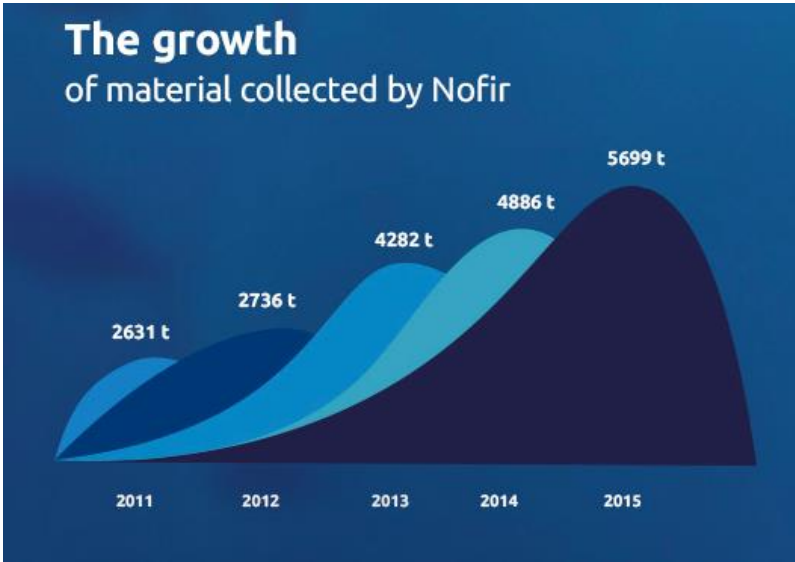
<sup>230</sup> <https://ec.europa.eu/environment/eco-innovation/projects/en/projects/eufir>

<sup>231</sup> *A European system for collecting and recycling discarded equipment from the fishing and fish farming industry - Eco-Innovation - European Commission*, accessed 7 May 2019, [/environment/eco-innovation/projects/en/projects/eufir](https://ec.europa.eu/environment/eco-innovation/projects/en/projects/eufir)

Mediterranean nets and make savings in terms of the logistics. Additionally, NoFir improved collection efficiency by pooling small quantities of nets from different customers in the same country. However, it is worth recognising that the scale of the fishing industry in Norway (where the scheme started), and Iceland (where another collection/recycling system run) is considerably greater than in other EU countries. As such, efficient set up in terms of logistics is required for the scheme in other countries to obtain the value inherent in the material.

A second challenge with the scheme’s expansion was increased competition from alternative disposal routes in other countries. In some countries, the alternative disposal route (i.e. landfill) was cheaper than in Norway where landfill costs (for fishing gear) are in the region of 280 €/t, and hence there is a strong economic incentive for fisheries in Norway to dispose of their waste gear through the programme as it presents a saving relative to the status quo.<sup>232</sup> Elsewhere, if landfill is a similar cost and as convenient or more convenient as disposal through NoFir then there may be less of an incentive for fishing vessels to use the scheme for disposal.

**Figure A 5: Growth in quantities of gear collected by NoFir 2011-2015** <sup>233</sup>



**Fee Structure**

In contrast to EPR systems in other sectors, NoFir is not funded by producer fees. Instead, it operates more as a collection and recycling system – obtaining funding from

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<sup>232</sup> Deloitte, and Wageningen University and Research Centre (2018) *Study to support impact assessment for options to reduce the level of ALDFG*, 2018, <https://webgate.ec.europa.eu/maritimeforum/en/system/files/Final%20Report%20Plastics%20from%20Fishing%20Gear%20Delivered.pdf>

<sup>233</sup> *About Us - NoFir - Recycling discarded equipment from fishing and fish farming.*, accessed 7 May 2019, <https://nofir.no/about-us/>

the material revenue of recycling fishing gear, and having received EU funding to invest in expansion. All fishing gear, whether profitable or not-profitable to recycle, is accepted by NoFir and the organisation reports receiving increasing quantities of material from small suppliers who would otherwise have difficulty disposing of waste correctly.<sup>234</sup> NoFir can offer considerable savings to such operators as a large 20 tonne net would usually cost around €5,600 to landfill and another €1,400 to transport.<sup>235</sup> By contrast, these materials are collected for free by NoFir. As such, no fee is paid by fishermen at the point of collection and this creates an incentive to deliver to the scheme as the alternative disposal routes generally charge a fee for disposal. In some cases, NoFir may pay to collect material depending on both the quality and the transport distance required.<sup>236</sup> Nylon is the most valuable material and hence fishermen may receive a payment for this.

The project was operating at a profit (€430,000 before tax in 2014), although it is reliant on access to cheaper labour in Lithuania and Turkey for reprocessing of collected materials.<sup>237,238</sup> It is also understood that profits may have reduced slightly since 2014, following expansion to cover a greater number of countries, subsidised in part by revenue from the Norwegian scheme.<sup>239</sup>

### Scheme Performance

EuFir collected 910 tonnes of fishing gear over the three years of the eco-innovation project.<sup>240</sup> This material was collected from Iceland, Scotland, Ireland, Denmark and the Netherlands and it is understood that collections of material from Norway in part subsidised Nofir's activities in these countries. During the project, Nofir collected 501 tonnes from Iceland, 340 tonnes from Scotland, 14 tonnes from Ireland, 22 tonnes from Denmark and 33 tonnes from the Netherlands.<sup>241</sup> An LCA report was produced looking at the impacts of the EuFir programme, based on the average output composition of 76% PA6 (nylon), 13% PP, 9% HDPE, 2% lead and 1% steel.<sup>242</sup> This found that per

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<sup>234</sup> Personal communication with Øistein Aleksandersen, CEO of Nofir (2015)

<sup>235</sup> Personal communication with Øistein Aleksandersen, CEO of Nofir (2015)

<sup>236</sup> Nofir (2019) *Nofir Q&A*, accessed 3 April 2019, <https://nofir.no/questions-answers/>

<sup>237</sup> Personal communication with Øistein Aleksandersen, CEO of Nofir (2015)

<sup>238</sup> It was not possible to obtain a more up to date figure on the profitability of Nofir

<sup>239</sup> Nofir, and Life Cycle Engineering (2015) *Summary Report: Life Cycle Assessment of EUfir system - A European system for collecting and recycling discarded equipment from the fishing and fish farming industry*, 2015, [https://nofir.no/wp-content/uploads/2016/02/executive\\_summary\\_LCA.pdf](https://nofir.no/wp-content/uploads/2016/02/executive_summary_LCA.pdf)

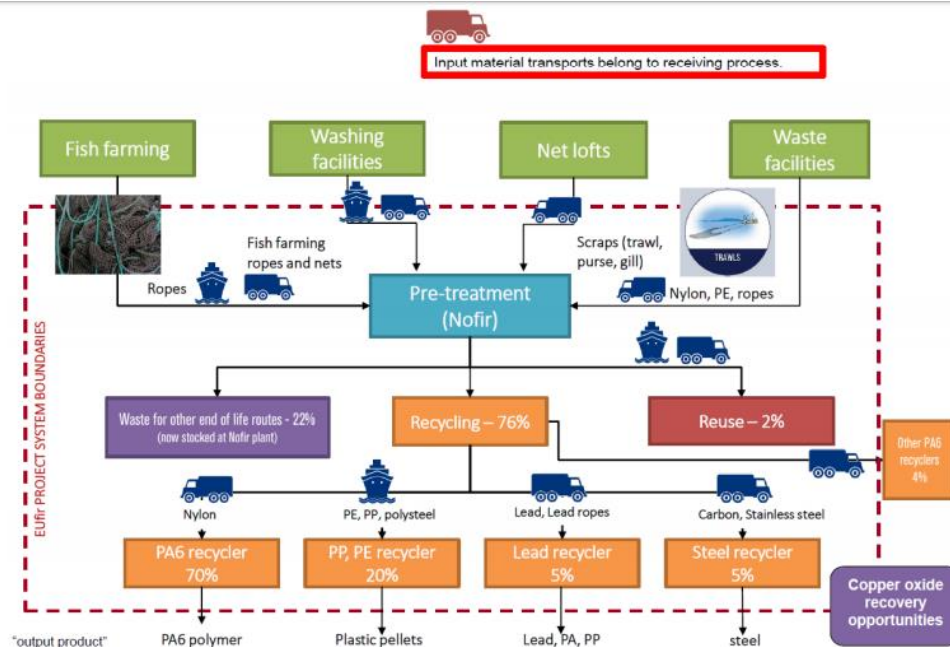
<sup>240</sup> Nofir, and Life Cycle Engineering (2015) *Summary Report: Life Cycle Assessment of EUfir system - A European system for collecting and recycling discarded equipment from the fishing and fish farming industry*, 2015, [https://nofir.no/wp-content/uploads/2016/02/executive\\_summary\\_LCA.pdf](https://nofir.no/wp-content/uploads/2016/02/executive_summary_LCA.pdf)

<sup>241</sup> Nofir, and Life Cycle Engineering (2015) *Summary Report: Life Cycle Assessment of EUfir system - A European system for collecting and recycling discarded equipment from the fishing and fish farming industry*, 2015, [https://nofir.no/wp-content/uploads/2016/02/executive\\_summary\\_LCA.pdf](https://nofir.no/wp-content/uploads/2016/02/executive_summary_LCA.pdf)

<sup>242</sup> Nofir, and Life Cycle Engineering (2015) *Summary Report: Life Cycle Assessment of EUfir system - A European system for collecting and recycling discarded equipment from the fishing and fish farming industry*, 2015, [https://nofir.no/wp-content/uploads/2016/02/executive\\_summary\\_LCA.pdf](https://nofir.no/wp-content/uploads/2016/02/executive_summary_LCA.pdf)

kilogram of average output material the scheme resulted in a 0.8kg decrease in waste material to landfill, to incineration, or discarded at sea. There was a 3.6kg CO<sub>2</sub>e (per output kilogram) decrease in overall carbon footprint based on virgin production of gear compared to the total EuFir system.<sup>243</sup> An overview of the EuFir system as considered in the LCA is shown in Figure A 6. As shown, some gear collected is prepared for reuse.

**Figure A 6: Flow diagram of NoFir's EuFir collection and recycling scheme**



## Scope

NoFir continues to operate beyond Norway and in 2017 developed a partnership with DIOPAS AS in Greece.<sup>244</sup> This followed collections starting in Malta in 2016. In Malta, fishermen were having difficulties disposing of end-of-life nets with limited options for storage of the nets and with landfills often refusing to take this kind of waste due to issues of entanglement with machinery.<sup>245</sup> Establishment of a collection system through

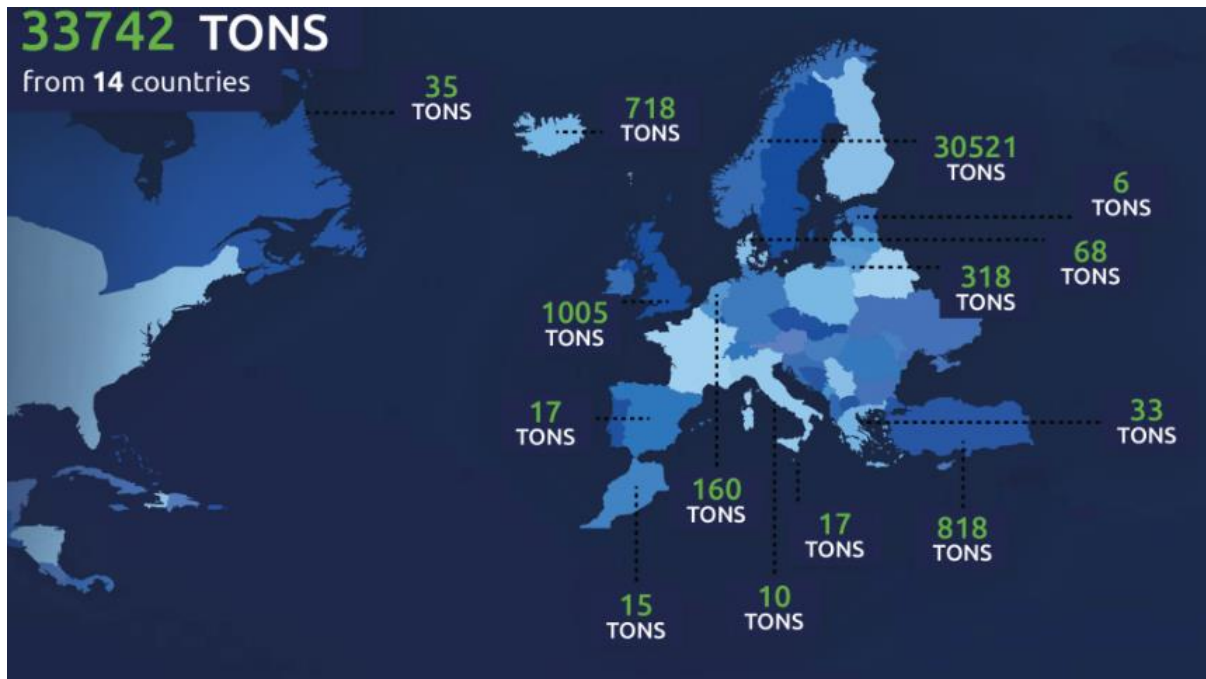
<sup>243</sup> NoFir, and Life Cycle Engineering (2015) *Summary Report: Life Cycle Assessment of EUfir system - A European system for collecting and recycling discarded equipment from the fishing and fish farming industry*, 2015, [https://nofir.no/wp-content/uploads/2016/02/executive\\_summary\\_LCA.pdf](https://nofir.no/wp-content/uploads/2016/02/executive_summary_LCA.pdf)

<sup>244</sup> (2017) *New load of fishing nets - Partnership with DIOPAS*, accessed 7 May 2019, <https://nofir.no/new-load-of-fishing-nets-from-greece-sent-to-recycling/>

<sup>245</sup> *Norwegian company collects 8,000 kg of old fishing nets in Malta, avoiding disposal at sea - The Malta Independent*, accessed 7 May 2019, <http://www.independent.com.mt/articles/2016-04-09/local-news/Norwegian-company-collects-8-000-kg-of-old-fishing-nets-in-Malta-avoiding-disposal-at-sea-6736156034>

NoFir may have prevented disposal of these nets at sea.<sup>246</sup> In future, NoFir looks to continue expansion of geographical scope with the organisation looking at expansion to other major areas of fishery production such as Vietnam, Canada and the Seychelles.<sup>247</sup> The quantities collected by NoFir are however still dominated by material from Norway, (see Figure A 7).<sup>248</sup>

**Figure A 7: NoFir collection quantities 2011-2017<sup>249</sup>**



## A.5.4 Iceland

### Operation of the Scheme

Fishing is an economically important sector to Iceland, representing 30-35% of GDP and with Iceland's catch making up a significant proportion of the total for the European

<sup>246</sup> Norwegian company collects 8,000 kg of old fishing nets in Malta, avoiding disposal at sea - *The Malta Independent*, accessed 7 May 2019, <http://www.independent.com.mt/articles/2016-04-09/local-news/Norwegian-company-collects-8-000-kg-of-old-fishing-nets-in-Malta-avoiding-disposal-at-sea-6736156034>

<sup>247</sup> Olsen, S. (2018) *Har kuttet CO2-utslipp tilsvarende 8.000 fly mellom Oslo og London ved å gjenvinne oppdrettsutstyr*

<sup>248</sup> *About Us - NoFir - Recycling discarded equipment from fishing and fish farming.*, accessed 7 May 2019, <https://nofir.no/about-us/>

<sup>249</sup> *About Us - NoFir - Recycling discarded equipment from fishing and fish farming.*, accessed 7 May 2019, <https://nofir.no/about-us/>

Economic Area (EEA) at 17%.<sup>250</sup> In Iceland, fishing gear is included in the legislation for an advanced disposal fee under the Icelandic Recycling Fund (IRF). An advanced disposal fee is a charge applied at the point of import of material, based on tariff codes, to cover the cost of end of life treatment. Whilst legislated, this system is not currently employed as the Federation of Icelandic Fishing Vessel Owners and Fish Processing Plants (SFS)<sup>251</sup> manages fishing gear waste in lieu of having an advanced disposal fee. SFS have been responsible for the operation of collection stations for fishing gear since an agreement in 2006, with fishing nets exempted from the recycling fee and a collection scheme starting in 2007.<sup>252,253</sup>

At present, the government is satisfied with this system but could require fishing gear to be covered by the advanced disposal fee in future if the scheme's performance declines. SFS gains from taking responsibility for this waste management as they can operate the system at a lower cost than via the government's advanced disposal fee.<sup>254</sup> The Icelandic Recycling Fund (IRF) has estimated that there would likely be a 50% increase to tariff codes for materials imported to produce fishing gear if the scheme were to be managed with an advanced disposal fee.<sup>255</sup>

When fishing gear reaches end of life and needs to be recycled, vessel crews undertake the process of cleaning and separating the materials. Mainly, sand and large pieces of contamination or biofouling are removed and wire and rope are separated from nets.

### Fee Structure

Once prepared, the material is transported to a collection centre in Iceland with the transport cost paid for by the vessel owner. Alternatively, for small vessel owners using major harbours some collection containers are provided where material can be deposited free of charge. The average cost to vessel owners is around 85-110 €/t of fishing gear which is similar to the price of disposal through landfill but with the benefit of an organised waste management system, environmental credentials for the fishing and aquaculture industry, and recycling.<sup>256</sup> The cost to vessel owners varies based on

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<sup>250</sup> Gudlauger Sverrisson (2015) The Icelandic approach to take back of discarded fishing nets, paper given at Microplastic in the Environment: Sources, Impacts and Solutions, Cologne, 23 November 2015, <http://microplastic-conference.eu/programme>

<sup>251</sup> This represents a merger of two previous associations in Iceland's fishing industry - The Federation of Icelandic Fishing Vessel Owners (LÍÚ) and the Federation of Icelandic Fish Processing Plants. The new combined organisation (SFS) was founded in 2014.

<sup>252</sup> Fisheries Iceland (2017) *Resource Utilisation and Environmental Footprint, 2017*, [https://sfs.is/wp-content/uploads/2018/09/Environmental\\_report\\_2017.pdf](https://sfs.is/wp-content/uploads/2018/09/Environmental_report_2017.pdf)

<sup>253</sup> Personal Communication with Gudlauger Sverrisson, Operational Manager, Icelandic Recycling Fund (2019)

<sup>254</sup> Personal communication with Gudlaugur Sverrisson, Operational Manager, Icelandic Recycling Fund (2015)

<sup>255</sup> Personal communication with Gudlaugur Sverrisson, Operational Manager, Icelandic Recycling Fund (2015)

<sup>256</sup> Personal communication with Gudlaugur Sverrisson, Operational Manager, Icelandic Recycling Fund (2015)



transport distance required. In addition, there is a time cost for the cleaning and sorting required from vessel crews. However, it is worth remembering that it is in the interests of the fishing industry to recycle gear and meet the targets set as the operation of the scheme is currently cheaper than it would be under an advanced disposal fee.

Most of the waste collected is transported to Denmark to be processed. There is an open market for recycling companies to compete for the material. However, at the moment the Danish firm Plastix receives most of the material exported.<sup>257,258</sup> This is then recycled, or transported onwards to other reproducers for recycling. The cost of shipping from Iceland to Denmark (~95€/t) is paid by the receiving recycler and no gate fee is charged.<sup>259</sup>

The functioning of the Icelandic system for fishing gear does not use producer fees for quantities of gear placed on the market. Instead, the industry association is responsible for providing the collection and recycling of fishing gear, the cost of which is covered from the recycling revenue and from transport charges to fishing vessels. In addition, fees are not charged to fishing vessel owners beyond the cost of transport of material which tends to be cheaper than disposal through landfill.<sup>260</sup>

In the instance that the industry fails to achieve recycling targets in future, advanced disposal fees would be applied to fishing gear in Iceland. It is understood that the modulation of these fees would need to be revised and decided should this happen and that end of life costs would be taken into account. However, at present there is no producer fee and hence no fee modulation within the Icelandic system.

### Scheme Performance

Targets have been in place for recycling of nets. These were set at 45% for 2006, 50% for 2007 and 60% for 2008. SFS reports back annually to the IRF on the results of the recycling programme. Performance of the scheme is based on estimated quantity of material placed on the market combined with an understanding of the lifespan of different types of fishing gear. This understanding has been developed through undertaking research on the Icelandic fishing industry, and lifespan of gear types used.

As a general rule, it is estimated that 1kg of fishing gear is used per tonne of fish caught and as such the amount used per year is around 1300 tonnes in Iceland.<sup>261</sup> In comparison with export figures of ~1000 tonnes per year to Denmark for recycling this yields an

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<sup>257</sup> *Plastix A/S* <https://plast.dk/en/members/plastix-as/>

<sup>258</sup> Personal Communication with Gudlaugur Sverrisson, Operational Manager, Icelandic Recycling Fund (2019)

<sup>259</sup> Personal Communication with Gudlaugur Sverrisson, Operational Manager, Icelandic Recycling Fund (2019)

<sup>260</sup> Personal Communication with Gudlaugur Sverrisson, Operational Manager, Icelandic Recycling Fund (2019)

<sup>261</sup> Gudlaugur Sverrisson (2015) The Icelandic approach to take back of discarded fishing nets, paper given at Microplastic in the Environment: Sources, Impacts and Solutions, Cologne, 23 November 2015, <http://microplastic-conference.eu/programme>

approximate recycling rate of ~74% - exceeding the targets set for the scheme.<sup>262</sup> A small amount of material is collected which cannot be recycled, which includes tyres used for bottom trawling nets. These are instead landfilled within Iceland. Fisheries Iceland state that during the period 2006-2016, 96% of collected material was recycled, as such, the vast majority of material collected is recyclable.<sup>263</sup> Combined materials such as PE or PP with steel can cause a problem for recycling through being difficult to separate. In addition, new stronger polymers used in fishing ropes such as Dyneema® may also be challenging at end of life. Dyneema is an ultra-high molecular weight polyethylene (UHMwPE) which cannot easily be cut and this limits its recyclability.

One of the factors in ensuring the success of the scheme is the potential for Iceland to legislate fishing gear under the advanced disposal fee if the scheme performance is unsatisfactory. As this would be more expensive for the industry, it is in their interest to ensure that the recycling targets are met and that fishermen deliver material to the scheme. Further, participation in the scheme is being used by some producers as a marketing point, highlighting their sustainable use of fishing gear.<sup>264</sup>

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<sup>262</sup> Gudlauger Sverrisson (2015) The Icelandic approach to take back of discarded fishing nets, paper given at Microplastic in the Environment: Sources, Impacts and Solutions, Cologne, 23 November 2015, <http://microplastic-conference.eu/programme>

<sup>263</sup> Fisheries Iceland (2017) *Resource Utilisation and Environmental Footprint*, 2017, [https://sfs.is/wp-content/uploads/2018/09/Environmental\\_report\\_2017.pdf](https://sfs.is/wp-content/uploads/2018/09/Environmental_report_2017.pdf)

<sup>264</sup> Personal Communication with Gudlauger Sverrisson, Operational Manager, Icelandic Recycling Fund (2019)

# A.6.0 Furniture

## A.6.1 Existing EPR Schemes for Furniture

**Table A 12: Summary Table of Existing and Potential Future Criteria for Fee Modulation**

Country	Existing Criteria	Potential Future Criteria
France	<p>Modulated fees are set based on how easy it is to recycle furniture items. Producers can benefit from lower tariffs by producing furniture items which are primarily made of the same material that are easy to recycle; wood or metal.</p>	<p>France are implementing changes to the modulation fee system at the start of 2020 which will see the scheme continue to offer producers lower tariffs for producing furniture items of primarily easy to recycle materials (wood and/or metal). However, the minimum requirement for the criteria has been lowered by 20% and producers can submit furniture which is made of both wood and metal.</p>

### A.6.1.1 France

#### Operation of the Scheme

France’s furniture EPR scheme was created in 2009 to address the issue of more than 50% of waste furniture and 100% of waste mattresses ending up in landfill.<sup>265</sup> Legislation to support a mandatory EPR scheme was implemented in 2010, stipulating that producers of furniture must provide for the collection, sorting, recovery and treatment of waste furniture, either by setting up an individual system or financing State-approved collective schemes.<sup>266</sup> France’s furniture EPR policy has three main objectives: to reduce

<sup>265</sup>[https://www.europur.org/images/Documenten/16\\_EU\\_Member\\_States\\_Recycling\\_Schemes\\_for\\_mattresses\\_and\\_furniture\\_the\\_French\\_example-Cecile\\_des\\_Abbayes.pdf](https://www.europur.org/images/Documenten/16_EU_Member_States_Recycling_Schemes_for_mattresses_and_furniture_the_French_example-Cecile_des_Abbayes.pdf)

<sup>266</sup>

the quantity of waste furniture sent to landfill, increase recycling and increase eco-design.

Éco-Mobilier was set up as the PRO for the furniture EPR scheme in 2011 and is a not-for-profit organisation approved by the French Ecology, Sustainable Development and Energy Ministry. Éco-Mobilier first received accreditation on 1<sup>st</sup> January 2013 for a five-year period and has since been granted a 6 year renewal for the period of 2018 – 2023.<sup>267</sup> In 2020, Éco-Mobilier proposes to make significant changes to the current contract and tariff system used to fund the scheme to reach their goal of zero waste furniture sent to landfill by 2023. It is hoped that extra funds raised from these changes will fund more collection points for waste furniture in France and encourage manufacturers to improve the recyclability of furniture.<sup>268</sup>

Éco-Mobilier is responsible for collection, sorting, recycling and recovery of used furniture and mattresses. In 2018, end-of-life quilts and pillows were also added to the scheme.<sup>269</sup> Producers fulfil their EPR obligations by funding the scheme via ‘eco-fees’. Éco-Mobilier is then responsible for conducting, commissioning or funding collection, removal and processing services for furniture waste and paying the share of contributions owed to collection partners, primarily local authorities.<sup>270</sup> End-of-life furniture can be deposited at one of over 4,000 collection points in France, most commonly located at public waste centres, distributors or local authority collection points.<sup>271</sup>

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<sup>267</sup> [https://www.eco-mobilier.fr/wp-content/uploads/2018/09/note\\_d\\_info\\_fabricants\\_europeens\\_internationnaux\\_uk\\_2018\\_v2.pdf](https://www.eco-mobilier.fr/wp-content/uploads/2018/09/note_d_info_fabricants_europeens_internationnaux_uk_2018_v2.pdf)

<sup>268</sup> Éco-Mobilier, *Contract De Services 2020, 2019*

<sup>269</sup> <https://www.eco-mobilier.fr/en-savoir-plus/>

<sup>270</sup> [https://www.eco-mobilier.fr/wp-content/uploads/2018/09/nouveau\\_contrat\\_uk.pdf](https://www.eco-mobilier.fr/wp-content/uploads/2018/09/nouveau_contrat_uk.pdf)

<sup>271</sup> Éco-Mobilier, *Rapport d'activité 2017, 2017*, p. 15

## Fee Structure

Furniture producers fund Eco-Mobilier by adding recycling fees to their product prices and paying them back to Éco-Mobilier at the end of each quarter. Producers must also assign an Éco-Mobilier product code to all furniture put on sale and so the fee is visible to customers.<sup>272</sup> Éco-Mobilier calculates the financial contribution dependent upon the volume of products an organisation produces (i.e. a banded admin charge) and sets eco-fees annually.

Different fees apply to three different categories of furnishing: seats, beds/bedding and furniture. For seats, the pricing scale is organised by product type and the number of seating places the item has (i.e. if a seating item can seat one person or multiple). For beds/bedding, the pricing scale is organised by product type and product dimensions. For other furniture, the value of the eco-fee depends on the weight of the product.<sup>273</sup>

In 2016, Eco Modulation Criteria for new furniture placed on the market were introduced. A lower levy is charged to manufacturers where they meet environmental product criteria, of which there are currently three, made simple to streamline the administration process. The criteria covers products which are:

- 1) Composed of 95% metal and no padding (easy to recycle);
- 2) Composed of 95% wood, sustainably sourced (easy to recycle); and
- 3) Scalable items, where the dimensions can be adjusted as the user grows i.e. furniture for children.<sup>274</sup>

The criteria can be met by businesses on a voluntary basis. Eco-modulation criteria had to be designed so that a minimum of 3% furniture meet the criteria by 2017. If companies comply with criteria, they pay a lower levy – a fee reduction of about 20% in order to incentivise design for recycling.

Modulated fees for all criteria are the same and do not favour any of the 3 criteria. The scale for modulation is different for all three categories of furnishing. For example, the pricing scale for beds is dependent on type of product and size, the pricing scale for seats is dependent on type of product and how many people it can seat, and furniture is based solely on item weight. These fees are shown in Table A 13.



<sup>272</sup> [https://www.eco-mobilier.fr/wp-content/uploads/2018/09/note\\_d\\_info\\_fabricants\\_europeens\\_internationnaux\\_uk\\_2018\\_v2.pdf](https://www.eco-mobilier.fr/wp-content/uploads/2018/09/note_d_info_fabricants_europeens_internationnaux_uk_2018_v2.pdf)

<sup>273</sup> [https://www.eco-mobilier.fr/wp-content/uploads/2018/09/bareme\\_eco\\_part\\_eco-mobilier\\_uk\\_2018\\_v3.pdf](https://www.eco-mobilier.fr/wp-content/uploads/2018/09/bareme_eco_part_eco-mobilier_uk_2018_v3.pdf)

<sup>274</sup> Ibid.

**Table A 13: Modulation of fees for beds/bedding (2018) – Eco Mobilier, France**

Product type	Size	Standard Fee <sup>275</sup>	Modulated Fee <sup>276 277</sup>	Criteria
Slatted bed base	≤ 120 cm	€ 2.33	€ 2.08	1, 2 or 3
	> 120 cm	€ 3.76	€ 3.33	1 or 2
	Other	€ 4.66	€ 4.17	1 or 2
Baby bed base / Futon base/ Roll-out slatted bed base / Camp bed	≤ 120 cm	-	-	-
	> 120 cm	-	-	-
	Other	€ 0.92	€ 0.83	3
All mattress	≤ 120 cm	€ 2.50	€ 1.67	3
	> 120 cm	€ 5.00	-	-
	Other	€ 5.00	-	-

From January 1<sup>st</sup> 2020, Éco-mobilier will be making changes to the tariff system. Firstly, seating tariffs will be set by weight rather than type and how many people it seats as in the current system. There will be more opportunities for producers to make use of modulated fees as the criteria change and more focus is placed on furniture that is made of wood and/or metal as they are easier to recycle. The existing criteria requiring products to be composed of either 95% metal or 95% wood will be lowered to 75% composition (by mass) and producers can choose for this 75% to be entirely wood or metal, or a combination of the two material types.<sup>278</sup>

### Scheme Performance

In 2017, 530,100 tonnes of end-of-life furniture was collected directly by Éco-Mobilier, with 93% either recycled or recovered. Éco-Mobilier had a target of 80% material recovery from collected furniture by the end of 2017, which has been exceeded. The reported coverage of the EPR scheme in France in 2017 was 92.5%. When the EPR scheme finally covers 100% of the territory, expected to take place in 2020, Éco-Mobilier will be responsible for managing approximately 1.2 million tonnes of end-of-life furniture

<sup>275</sup> Ibid.

<sup>276</sup> [https://www.eco-mobilier.fr/wp-content/uploads/2018/09/bareme\\_eco-modulation-uk-2018\\_v3.pdf](https://www.eco-mobilier.fr/wp-content/uploads/2018/09/bareme_eco-modulation-uk-2018_v3.pdf)

<sup>277</sup> Exclusive of VAT

<sup>278</sup> Éco-Mobilier, *Les Nouveaux Tarifs Applicables à Partir Du 1 Janvier 2020*, 2019

per year and will collect the equivalent of 40% of furniture placed on the market in 2023.<sup>279</sup>

The scheme received €161.3 million in contributions in 2017; 62% from furniture, 19% from seating and 19% from beds/bedding. Direct operational costs of the scheme amounted to €103.8 million. These costs include the costs of collection, transit, preparation and processing carried out by operators. €45 million was provided by Éco-Mobilier to collection partners. Éco-mobilier spends more than one million euros (1% of its budget) for research on topics such as the recovery of wood fibres; on the production of bio-ethanol from furniture waste; and on the recycling of foam, with a funding call for mattress innovation in 2017.

In 2017, 240 million units of furniture subject to eco-contributions were placed on the market. 6.6 units placed on the market benefitted from modulated fees.<sup>280</sup>

## A.7.0 Textiles

### A.7.1 Existing EPR Schemes for Textiles

Table A 14: Summary Table of Existing Criteria for Fee Modulation

Country	Existing Criteria
France	<p>Modulated fees were initially set to encourage producers to increase the percentage of recycled content used in new textiles items. Eco TLC most recently added fee modulation for durability of certain products only (t-shirts, jeans, jumpers, bedsheets and shoes). These products need to meet two of the following criteria to be eligible for the modulated fee:</p> <ul style="list-style-type: none"> <li>• Dimensional stability</li> <li>• Colour fastness</li> <li>• Abrasion resistance</li> <li>• Piling</li> </ul> <p>The durability modulated fee cannot be applied to a textiles item in addition to any discount for recycled content.</p>

<sup>279</sup> Éco-Mobilier, *Rapport d'activité 2017*, 2017, p. 23

<sup>280</sup> Éco-Mobilier, *Rapport d'activité 2017*, 2017, p. 18

## A.7.1.1 France

### Operation of the Scheme

France is the only country in the world implementing a mandatory EPR scheme for end-of-use clothing, linen and shoes.<sup>281</sup> France's policy on EPR came into force in January 2007, stipulating that all producers who place new products on the market of clothing, shoes and household linen (TLC)<sup>282</sup> intended for households shall contribute to or provide for recycling and the treatment of waste from these products.<sup>283</sup> Producers can fulfil this obligation either by contributing financially to a PRO that will enter in agreement with those in charge of waste management (i.e. local authorities) and provide financial support for recycling and waste treatment of waste textiles, or putting in place an individual system of recycling and waste treatment of waste textiles. Textile producers have largely chosen to meet their EPR obligations via a PRO; Eco TLC, a not-for-profit private company constituted of 29 associates from industry, was set up at the end of 2008 and acts as the single PRO for the sector, currently representing 95% of the textiles industry.<sup>284</sup>

The primary purpose of the textiles EPR in France is to develop the collection and sorting of used textiles and optimise the process so it can be deemed sustainable. Eco TLC operates on fixed-term mandates, currently April 2014 – December 2019, which sets targets for the scheme to be achieved by the end of the mandate period. At present, there is a set target for 50% of TLC placed on the market to be diverted from the residual waste stream (or 300,000 tonnes collected) in 2019, and at least 95% of tonnage sorted should result in material recovery (mainly recycling or reuse).<sup>285</sup>

There are a number of options for post-consumer textiles collection in France but the most prominent option is on-street containers which are owned by more than 200 organisations. Some organisations also conduct door-to-door collection services either from households or collected in areas such as supermarkets or retail shops. Eco TLC primarily monitors outlets that collect unsorted textiles, such as on-street containers, and will therefore require sorting and recycling.<sup>286</sup> Collected textiles are taken to a sorting facility for sorting and recycling, owned by private organisations. Sorting agencies receive financial support from Eco TLC by way of €65 per tonne for recycling and reuse and €20 per tonne for energy recovery. Additional supports of €50 to €125 are given where sorters have made the effort to increase sorting capacity of the facility or have

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<sup>281</sup> Mohammad Abdullatif Bukhari, Ruth Carrasco-Gallego and Eva Ponce-Cueto. 'Developing a national programme for textiles and clothing recovery', *Waste Management & Research*, 36, 4 (2018), pp. 321 – 331 (p. 321).

<sup>282</sup> Represents the French for clothing, linen and footwear (Textiles d'habillement, Linge de maison et Chaussures)

<sup>283</sup> Environmental Code – Article L541-10-3

<sup>284</sup> WRAP, *UK Textiles EPR*, 2018

<sup>285</sup> [https://www.ecotlc.fr/ressources/Documents\\_site/2016\\_at\\_a\\_glance\\_BD.pdf](https://www.ecotlc.fr/ressources/Documents_site/2016_at_a_glance_BD.pdf)

<sup>286</sup> Bukhari., p. 324



hired workers experiencing difficult social situations. After sorting and recycling, sorting facilities can sell any recovered materials to the appropriate markets.<sup>287</sup>

**Fee Structure**

Eco TLC announces the level of fees for the scheme annually. This is based on estimates on how much revenue is needed to meet the mandated targets. Producers with a turnover below €750,000 or placing fewer than 5,000 items on the market are subject to a fee of €36. For the rest of the registered producers, eco-contributions depend on the quantity and the size of the items they place on the market.<sup>288</sup> The member companies pay fees based on the volume of products (and size) put on the market the previous year and make their contributions in the first quarter of the year.<sup>289</sup> Eco TLC operate a tariff system based on the size of the TLC item: Very Small Items, Small Items, Medium-Sized Items and Large Items. Eco TLC provides detailed categorisation of different TLC items, Table A 15 provides some examples.

**Table A 15: Examples of TLC Items included in Tariff Categories** <sup>290</sup>

Tariff Category	Examples
Very Small Items	Ankle socks, gloves, handkerchiefs, placemats, flannels
Small Items	Pyjamas (children’s), hats, flip-flops, pillow cases, hand towels
Medium-Sized Items	Pyjamas (men’s & women’s), sandals, boots, bath towels, quilt covers
Large Items	Suits (men’s and women’s), tracksuits (men’s and women’s), coats (men’s and women’s), blankets

Eco TLC first introduced fee modulation in 2012, granting a 50% discount for TLC items which are made of a minimum of 15% post-consumer recycled fibres or materials. This was followed in 2016 with a 25% discount given for items with at least 30% pre-consumer recycled content. Most recently, a new discount of 75% has been introduced for a selection of TLC items (t-shirts, jeans, jumpers, bedsheets and shoes) should they meet set criteria on durability. To be eligible for the durability discount, items need to meet two minimum quality criteria, which vary depending on the item type, and include: abrasion resistance, dimensional stability (how much the dimensions of a garment

<sup>287</sup> Bukhari, p. 325.

<sup>288</sup> [https://www.ecotlc.fr/ressources/Documents\\_site/2016\\_at\\_a\\_glance\\_BD.pdf](https://www.ecotlc.fr/ressources/Documents_site/2016_at_a_glance_BD.pdf)

<sup>289</sup> Bukhari et al., p. 324.

<sup>290</sup> [https://www.ecotlc.fr/ressources/Documents\\_site/Contrat\\_adhesion\\_2017\\_GB.pdf](https://www.ecotlc.fr/ressources/Documents_site/Contrat_adhesion_2017_GB.pdf)

change when washed and dried), colour fastness and piling.<sup>291</sup> Table A 16 provides a breakdown of the standard and modulated fees per item size and TLC category.

**Table A 16: Modulation of fees (2019 rates) – Eco TLC, France** <sup>292</sup>

	Item size	Standard tariff (€ cent)	Modulated tariff 1: durability (€ cent)	Modulated tariff 2: post-consumer recycled content (€ cent)	Modulated tariff 3: pre-consumer recycled content (€ cent)
<b>Clothing</b>	Very Small	0.156	0.039	0.078	0.117
	Small	0.626	0.156	0.313	0.469
	Medium	0.938	0.234	0.469	0.703
	Large	6.259	1.565	3.130	4.695
<b>Linen</b>	Very Small	0.178	0.045	0.089	0.134
	Small	0.713	0.178	0.356	0.535
	Medium	1.068	0.267	0.534	0.801
	Large	7.128	1.782	3.564	5.346
<b>Footwear</b>	Small	0.739	0.185	0.370	0.554
	Medium	1.107	0.277	0.554	0.831

### Scheme Performance

In 2017, 624,000 tonnes of TLC were placed on the market in France and Eco TLC reportedly collected 223,000 tonnes. Of the collected TLC, 184,494 tonnes were sorted and 58.5% was sent for reuse and 41.2% for recycling (0.3% was not valued).<sup>293</sup> In relation to reaching the targets set out in their mandate, based on 2017 performance Eco TLC are 14.3% below their 50% diversion target and 12.1% away from their material recovery target.

<sup>291</sup> WRAP, UK Textiles EPR, 2018

<sup>292</sup> <https://www.ecotlc.fr/page-297-information-in-english.html>

<sup>293</sup> [https://www.ecotlc.fr/ressources/Documents\\_site/RA\\_2017\\_Eco\\_TLC\\_web.pdf](https://www.ecotlc.fr/ressources/Documents_site/RA_2017_Eco_TLC_web.pdf)

The modulated fees have not gained much uptake as of yet. Of the 2.6bn TLC items declared on the market in 2016, only 93,000 were declared under the modulated fees, and the majority under the post-consumer recycled content discount. Consequently, of €17.6 million worth of eco-contributions coming from the scheme in the same year, only 0.004% came from modulated fees. According to Eco TLC, this may be down to the incentive per piece being too low to cover the administrative costs of declaring and certifying the recycled content per unit.<sup>294</sup>

Though the uptake of the durability discount has been low in its first year, it has already gained more utilisation than the earlier implemented modulated fees. In 2018, producers reported 2.6 billion items of TLC were placed on the market in 2017, with 7 million declared under modulated fees. Of the €17.9 million eco-contributions made, 0.279% came from modulated fees with 96.6% of this number coming from the durability modulation.<sup>295</sup>

#### **A.7.1.2 US (California)**

A mandatory EPR program was introduced in the State of California for carpets under California Assembly Bill 2398 (AB2398). The law came into force in September 2010, with the main policy driver being increased landfill diversion and recycling. Under the bill, manufacturers, wholesalers and importers are considered as producers. They need to submit a so-called stewardship plan which includes the goals for increase in recycling, diversion from landfills, recyclability and the like.

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<sup>294</sup> WRAP, *UK Textiles EPR*, 2018

<sup>295</sup> *Ibid.*

## A.8.0 Stakeholder Engagement

### A.8.1 Attendee List for First Packaging Workshop

Date: 11<sup>th</sup> March 2019

Organisation	
AGVU Arbeitsgemeinschaft Verpackung + Umwelt	European Federation for Waste Management and Environmental Services (FEAD)
ALDI Sued	European Federation of Glass Recyclers (FERVER)
AliaXion/ Beverage Can Makers Europe (BCME)	European Organization for Packaging and the Environment (Euopen)
Alliance for Beverage Cartons and the Environment (ACE)	European Plastics converters (EUPC)
Anamet / Sepan (Greek recycler/ association)	European Recycling Platform
Apeal	Expra - Extended Producer Responsibility alliance
ArdaghGroup	Flexible Packaging Europe (FPE)
Ball packaging	Food Drink Europe
BASF	Friends of the Earth Europe
BDE (Federal Association of German Waste, Water and Raw Material Management)	Gruener-punkt
Borealis AG	Independent Retail Europe
British American Tobacco	Mars
CEN-CENELEC	Metal Packaging Europe

Organisation	
Circular Economy for Flexible Packaging (Ceflex)	Mtm plastics (part of borealis group)
CITEO	Municipal Waste Europe
CONAI Consorzio Nazionale Imballaggi	NatureWorks BV
Confederation of European Paper Industries (CEPI)	Novamont
DOW chemicals	Paprec Group
DS Smith	Plastics Europe
Ecopreneur	Plastics Recyclers Europe
ECOS (Ecostandard)	Polyolefin Circular Economy Platform (PCEP)
EEB	Reloop platform
Elipso (plastic and flexible packaging manufacturers in France)	Sphere
EuroCommerce	Styrenics Circular Solutions (SCS)
European Aluminium Association (EAA)	Synthos - Styrenics
European Association of Plastics Recycling & Recovery Organisations (EPRO)	Tetrapak
European bioplastics	TOMRA
European Brands Association (AIM)	Veolia
European container glass federation (FEVE)	Veolia/ EuRIC/ FEDEREC
European Federation for Waste Management and Environmental Services (FEAD)	Zero Waste Europe

## A.8.2 Attendee List for First WEEE and Batteries Workshop

Date: 12th March 2019

Organisation	
Advanced Rechargeable & Lithium Batteries Association (Recharge)	European Environmental Bureau (EEB)
Alliance Française des Industries du Numérique (AFNUM)	European Federation for Waste Management and Environmental Services (FEAD)
Ambilamp	European recycling industries' federation (EuRIC)
Anamet / Sepan (Greek recycler/ association)	European Recycling Platform
Apple	FEDEREC (French federation of recycling industries)
Association of European Manufacturers of automotive, industrial and energy storage batteries (EUROBAT)	Hewlett Packard Enterprise (HPE)
Association of Manufacturers of Domestic Appliances (AMDEA)	Home Appliance Europe (APPLiA)
BDE (Federal Association of German Waste, Water and Raw Material Management)	Independent Retail Europe
British American Tobacco Representation Brussels	Lighting Europe
CEN-CENELEC	Microsoft
Centre de Gestion Scientifique - MINES ParisTech	ORGALIM EU
Digital Europe	Plastics Recyclers Europe
ECOS (Ecostandard)	RePic

Eco-systèmes (ESR)	TESLA
EPBA (European portable batteries association)	Test and Measurement Coalition
EuroCommerce	THE DANISH CHAMBER OF COMMERCE
Eurometaux	Toy Industries of Europe (TIE)
European association of collection and recycling organisations for WEEE lamps and lighting (Eucolight)	WEEE Forum
European association of national collection schemes for batteries (EUROBAT)	WEEE Ireland
European Automobile Manufacturers' Association (ACEA)	Zero Waste Europe
European Battery Recycling Association (EBRA)/ Arcadis	

**A.8.3 Summary of First Packaging Workshop**



# Introduction

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This workshop was part of two European Commission studies relating to packaging:

- 4) A study on the effectiveness of the Essential Requirements and proposals for reinforcement; and
- 5) A study to support the preparation of the Commission's guidance for Extended Producer Responsibility (EPR) Schemes.

The workshop involved representatives from across the packaging industry and non-governmental organisations from a range of Member States. It was an opportunity to share information with stakeholders, and for stakeholders to discuss the direction of the two studies at an early stage.

A background paper was sent to participants two days before the meeting. Stakeholders commented that more time would have been appreciated to allow participants to best prepare for the workshop discussions.

This is a summary of the workshop discussions; the presentations used during the day accompany this note.

## Overview

An overview was given of the two studies, including the interactions between EPR, the Essential Requirements and wider EU waste policy. The scope to consider “recyclability” and “reusability”, rather than the binary concepts of being “recyclable” or “reusable”, was also discussed.

The Essential Requirements study is looking at the effectiveness of the Essential Requirements to date and potential for their reinforcement including through revisions in the Packaging and Packaging Waste Directive (PPWD).

The EPR study looks to support the preparation of guidance for existing law, under Article 8a of the Waste Framework Directive (WFD). The work covers packaging, WEEE and batteries, as well as a few additional product groups, and will generate guidance on “necessary costs”, “equal treatment”, fee modulation and enforcement (namely prevention of free-riding).

The studies are to be completed in 2019 to support the following timeline:

- Commission Report on review of the Essential Requirements potentially accompanied by a legislative proposal by end 2020. (Note that any legislative proposal would be made subject to a prior Impact Assessment)
- Implementation of Article 8a WFD by 2023.
- The PPWD's packaging recycling targets for 2025 and 2030.
- The Commission's target for plastic packaging to be reusable or recyclable in a cost effective manner by 2030.

This workshop was the first stage of engagement. There will be ongoing one-to-one discussions and interviews and stakeholders were invited to send position papers or further information, or to request a meeting with the project leads.

Related to the Essential Requirements study, 15 case studies will be developed over the next few months, looking at both best practice packaging and examples that are less likely to support high recycling rates. There will be two other workshops to (1) help finalise options to be modelled in the Essential Requirements study and (2) feedback on the results from both studies.

## Key Trends, Problematic Packaging and the Effectiveness of the Essential Requirements

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The following points were included in the workshop presentation.

### Key Trends

- Packaging generation has been increasing in absolute terms and on a per capita basis
- E-commerce packaging accounts for a growing share due to the increase in use of the internet to buy goods.
- There has been a trend towards lightweighting; between 1990 and 2015, all packaging types have decreased in weight per unit, with an average decrease of one third.
- There has been a shift away from glass and metal packaging towards paper, board and plastic. The use of bioplastics has also increased.
- Recycling rates for some materials are much higher than for others. Recycling in overall percentage terms has increased, and packaging recovery has increased slightly. Recovery for plastic packaging has seen a more marked increase.
- There is no EU-wide data on reuse, but market reports indicate that single use packaging has been on the rise while reuse has declined.
- Hazardous substances in packaging are believed to be declining.
- There is increasing demand for technical material that provides a barrier.

### Problematic Packaging

- “Problematic packaging” is difficult to define but it preliminarily refers in this context to packaging that is less likely to achieve high recycling rates because it is more difficult to:
  - collect (perhaps because it is easily littered);
  - sort (for instance because of its colour or small size); and/ or
  - recycle (due to additives or contaminants, or little demand/ use for the material).
- Some aspects of what is problematic to recycle are more widespread or more fundamental than others.

- Generally, the use of “problematic packaging” is on the increase, relative to more easily recyclable packaging.
- Can include inefficient packaging use, so the issue is how the material is used rather than the packaging type itself (e.g. overpackaging).

### Effectiveness of the Essential Requirements

- It is difficult to produce metrics on waste generation and prevention, with a number of possible methodologies being proposed.
- Previous research has indicated that cost reduction has been the main driver for packaging waste prevention through lightweighting. This is accompanied by environmental benefits through reduced resource use both for making and transporting the packaging.
- The Essential Requirements have arguably facilitated a situation in which incineration rates have increased more than recycling rates. Incineration with energy recovery increased by 9% between 1997 and 2002, slightly more than the 8% increase in recycling.
- Member States have relied heavily on presumed compliance (limited enforcement of the Essential Requirements), while limits for hazardous substances are more easily operationalised.
- It is hard to define concepts such as “consumer acceptance”, on which the Essential Requirements rely.
- The Essential Requirements do not reflect changes in waste legislation.
- The Essential Requirements were considered as part of the 2018 review of the Packaging and Packaging Waste Directive but there were no substantial revisions.

### Discussion

Participants raised the following points during the subsequent discussion. This section reflects the various viewpoints that were raised and does not indicate a consensus position.

A theme that was raised on a number of occasions was the importance of a harmonised approach across Member States and the interaction with collection infrastructure and sorting technologies and recycling infrastructures.

The need to take into account packaging together with the packaged product, hence to not overlook packaging’s functionalities was also supported by stakeholders on a number of occasions during the workshop.

Stakeholders welcomed the coordinated approach taken on both topics (guidelines for EPR fee modulation and the effectiveness of the Essential Requirements for packaging).

### Problematic Packaging

- A number of participants considered that “problematic packaging” is an inappropriate term. It was noted that terminology such as “harder to recycle” may be less open to misinterpretation.
- “Problematic packaging” does not necessarily take into account the purpose of packaging; for instance the key driver in the food sector is food safety. As such, it

was suggested that the functionality and life-cycle footprint of the packaging should be taken into account.

- “Problematic packaging” is also a concept which may stifle investments and innovation as it does not take into account ongoing and upcoming innovative solutions.
- It was proposed that the focus should also be on sorting technologies, recycling infrastructure and consumer behaviour, not just packaging design.
- Similarly, it was suggested that infrastructure matters in relation to “cost-effectiveness” in the sense that if there is an overcapacity for incineration this also has implications on cost effectiveness or recycling in a given country. Cost effectiveness may have to factor in the different environmental impacts from different types of end of life treatment.
- Packaging may be classified as problematic in some countries (e.g. because there is no infrastructure for separate collection, sorting and/or recycling of this packaging) but not in others. Thus, there is a need to consider the interaction with the collection and, sorting and recycling systems. Recycling infrastructure and technologies will be different in 2025 compared to today, and EPR provides an opportunity to improve infrastructure.
- The paper industry distinguishes between material that is recyclable in standard processes and material that requires a special process.
- Chemicals of concern should be taken into consideration and the Commission’s Communication on options to address the interface between chemical, product and waste legislation needs to be considered in this context.

## Definitions

- If the intention is to design for a circular economy, rather than to simply meet targets, then circularity should form part of the definition of recyclability, including the extent to which it provides recycled content for to substitute virgin materials in new packaging or products.
- The distinction between packaging being ‘technically’ recyclable and the costs of recycling that packaging is an important one.
- “Cost-effectiveness” depends on the benchmark used; the cost of recycling can be compared to other waste treatment options, but the costs of these depend on Member State policies and capacities, albeit a more harmonized standard is intended over time.
- A hierarchy of recycling could recognise whether the packaging can be subject to closed loop recycling into an equivalent (e.g. bottle to bottle) or the material cascaded to other applications that still displace virgin material.

## Essential Requirements

- The lightweighting trend respects the waste hierarchy by prioritising prevention, through reduction of material use. But this can make it more difficult, or less cost effective, to recycle. Reference was made that this serves the first level of the waste hierarchy (prevention).

- Some of the CEN Standards developed to prove compliance with the Essential Requirements contain a higher level of precision and clarity in terms of definition — such as related compostability — and as such, are more straightforward to use and enforce.
- There is room to improve the enforcement of the Essential Requirements in most Member States. Enforcement of the Essential Requirements by Member States could be improved through the development of European or national guidance.
- Guidance for the enforcement of the Essential Requirements should be at the Member State level, given differences in the level of investment of sorting technologies. It was pointed out that sorting technologies are different because the level of investment has been different in Member States, not because packaging and technologies differ widely from state to state. Others noted the need to balance harmonisation and differentiation.
- Producers comply with the Essential Requirements, even if they are not explicitly referring to the Essential Requirements as a driver for consideration of recyclability, waste prevention etc.
- The study and related future work should not stifle innovation, so the Essential Requirements should not be too prescriptive.
- It was stated that the Essential Requirements should serve the legal objectives of the Packaging and Packaging Waste Directive.

## Existing Eco-modulation in Member State EPR Schemes

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The following presentations were provided by producer responsibility organisations with modulated fees.

### CITEO

France's CITEO is a private company, run by clients. It deals with household packaging and printed and graphic papers.

Fees are based on the "Consumer Sales Unit", rather than per packaging unit, with fees increasing as the number of composite units increases.

Fee modulation is mandatory in France. CITEO has adopted a bonus/ malus approach, with bonuses for eco-design and awareness raising measures, such as the inclusion of sorting instructions on packaging. Packaging that citizens are instructed to dispose of separately but that is not recycled or packaging which is disruptive to the recycling process, is subject to a malus.

Obligated producers decide on the modulation criteria, after consultation with recyclers. They use simple criteria that are easy to understand and implement. CITEO has a flexible approach so they can respond to recycling and packaging innovations.

Modulated fees have seen an increase in the use of clear PET and packaging with sorting instructions attached, while the use of PVC bottles has declined.

The modulation structure will be reviewed next year. They are considering further bonus/ malus criteria to encourage resource preservation and circularity, and the possibility of penalties increasing periodically.

## Der Grüne Punkt

Der Grüne Punkt is Europe's oldest Packaging Recovery Organization, founded in 1991, and despite 15 years of competition is still the market leader in Germany. The German Packaging Act of 2019 includes higher targets for plastic packaging than the EU's 2025 targets. The Act requires EPR schemes to differentiate fees based on recyclability, and to incentivise recycled and renewable materials.

One possible basis for future fee modulation is the recyclability measurement approach developed by Cyclos-HTP Institute. This provides standards for assessing recyclability based on a transparent data set regarding packaging composition (which determines "theoretical" recyclability), and a continually updated assessment of the collection, sorting and recycling infrastructure available (which determines "actual" recyclability). Recycling infrastructure has to be available on an "industrial" scope in order to qualify. The result is an assessment of recyclability of a specific packaging, expressed in percentage terms (e.g. a particular type of packaging is recyclable to 93 %) which indicates the proportion of secondary materials that will be available to replace virgin materials.

Their proposal is to have standardised data entry for packaging composition for producers, and combine this with a standardised assessment of infrastructure available in Member States. This model is already used in Germany, and also in Austria, with several additional countries interested in collaboration. Feedback from producers is very positive as they are looking for harmonized approaches in determining recyclability.

The fee structure in Germany is based on weight and material, with the highest fee applied to plastics. The fee modulation model of Der Grüne Punkt is based on the recyclability assessment of cyclos-HTP. Producers have the choice of either paying the same fee for all their plastic packaging, or undergoing the recyclability assessment and paying differentiated fees based on recyclability.

## Expra

Italian organisation CONAI is a member of Expra and chairs the Sustainability & Packaging Working Group. Expra represents 28 packaging recovery organisations with a broadly similar approach.

Expra's members current approach to modulation is based on a fee per tonne to incentivise prevention and a fee by type of material to reflect the different environmental costs; materials with a high recycling rate have a low fee. They use a weight-based approach, rather than per-unit costs, because municipalities collecting the packaging waste operate in tonnes.

Expra has set out principles for harmonised fee modulation; fees should reflect real and efficient costs, be based on an LCA approach, avoid market restrictions, and allow for innovation, transparency and administrative simplicity.

Some Expra members include an additional level of modulation by classifying packaging into sub-categories by material.

There must be a minimum quantity of the packaging type on the market and it must be compatible with technologies. Packaging has to be sortable and there needs to be a collection in place. This is demonstrated by the existence of at least one recycler and a company that uses the recycled material.

## Discussion

The following points were made during the discussion on the presentations and approaches to modulation.

- Harmonisation is important so that producers are not required to respond to different approaches to modulation in several different countries, and to different schemes within countries.
- Harmonized guidelines for packaging design will create more homogeneous material flows for recycling, and enable material sourcing within the internal market, decreasing the dependency on virgin materials from other markets, as well as the dependency of other countries to accept materials for recycling (China ban...).
- Packaging engineers need simple guidelines they can follow.
- In countries where certain types of packaging are not typically recycled, there should be more transparency by PROs as to what the EPR fees cover if they are not contributing to the costs of recycling. It was further noted that that such packaging should be subject to higher fees than formats that are typically recycled. However, if it were simply due to inadequate infrastructure in one Member State, and the packaging type were typically recycled elsewhere in all other MSs, to do so would unfairly penalise producers.
- Revenues and resources should be taken into consideration so that it is the net costs that are covered by EPR fees. But it is difficult to protect against variations in market prices for both virgin and recycled materials.
- To support a competitive market, designs could consider end-market requirements.
- There should be moving targets and high eco-modulation to incentivise behaviour change and support the circular economy.

## Group Discussions

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The workshop was divided into two smaller groups to discuss a number of issues in more detail. Both the group discussions are summarised below. A range of views, and

opposing viewpoints, were expressed, so this summary does not indicate a consensus position.

## Approaches to Eco-Modulation

### Modulation Criteria

- It is important to avoid an administrative burden.
- Member States need some flexibility but there was general support for a harmonised approach to prevent different rules in different Member States and to avoid 28 conflicting sets of requirements.
- There was some support for a scale of recyclability, rather than a binary distinction of recyclable vs. non-recyclable.
- Fee modulation should be evidence-based, linked to (net) costs and avoid cross-subsidies between materials.
- Fee modulation criteria should be focused to be consistent with the achievement of the explicit agreed purpose in the recycling targets of the Waste Framework Directive.
- Punitive fees could be used to remove certain disruptors from the market e.g. certain polymers or inks, whereas the bonus/ malus approach may not provide enough economic incentive.
- Fees should be fair and based on how easy the packaging is to recycle in practice, supported by laboratory tests if available. I
- EPR schemes can promote value-chain thinking: effective collection, effective sorting and good quality for the recycler.
- Criteria may need to be different for transport packaging and consumer packaging.
- Eco-modulation should not hinder innovation.
- Modulation criteria can be set in principle, but the fee setting has to be the domain of the PRO, especially in competitive markets.
- An essential aspect of developing such criteria is innovation openness. Packaging design as well as sorting and recycling infrastructure change permanently, so that the determination of “recyclability” is also permanently changing. Innovative packaging which currently is not “recyclable” yet should be allowed on the market provided there is a credible, enforceable and auditable “gateway process” that will assure recyclability in a given period (e.g. 3-5 years).

### Recycling Capacities

- Recyclers should not define what packaging looks like and practical considerations should not restrict scope because technologies can change – need to consider what treatment options are in the pipeline.
- The Ellen MacArthur Foundation uses the term “recycling ready” to reflect plastics that are collectable, sortable and technically recyclable. It was noted during the follow up to the workshop that “recycling ready” should be clearly separated from “recyclable”. To claim that a packaging is recyclable requires that



the packaging is technically recyclable as well as collected, sorted and recycled in the existing infrastructure.

- Fees should be technology-neutral in the definition of recycling – allowing for organic, chemical, organic and mechanical recycling. Definitions should be harmonised across Europe.

## Recycled Content

- Using recycled content as a criterion for a bonus goes beyond the net cost principle and is not directly linked to recyclability and overall EPR schemes' responsibilities. Others argued that demand for recycled content will support recyclability.
- If the aim is to promote a circular economy, need to consider the end-market and brand owners' quality criteria.
- Modulation could not only be incorporated into fees but be reflected in access to recycle materials (with reduced prices for producers of packaging that is more easily recycled).
- Using recycled content in e.g. food / drink packaging (which makes up min. 70 % of household packaging) is not possible in many cases due to e.g. EFSA restrictions. If a requirement is considered for producers putting plastic packaging on the market to also use a proportion of recycle, there has to be an option to use them not in consumer packaging but e.g. in production, in products, in logistics, etc. Also, EFSA guidelines have to be updated to allow for more plastics to be used in food and near-food applications.

## PRO System

- Eco-modulation principles should be harmonised and applicable to all, regardless of whether there is a single scheme or competition in order to ensure a competitive level playing field and avoid cherry-picking at producer and/or scheme level.

## Necessary Costs, Equal Treatment & Freeriding

### Necessary Costs

- There must be a clear demarcation of the role and responsibilities of each actor.
- This is difficult to determine as Member States, and regions within Member States, calculate costs differently.
- Many costs in shared-cost systems depend on municipalities' decisions and choices, which are beyond producers' control.
- In the case where municipalities use contractors, a transparent tender process could serve to ensure costs are competitive.
- In some countries, scavengers remove high-value waste from bins, which reduces the value of the material collected and consequently may increase net costs.

### Equal Treatment

- There are cases where small companies simply pay a lump-sum.
- A harmonised approach across Member States is important.

- A de minimis is not necessary if the scheme has simple reporting requirements and fee calculations, avoiding an administrative burden.
- A de minimis is more complicated with companies based outside the EU, as they may have a small market share in each Member State, but be a more significant producer when considered on an EU-wide level.

### Free-Riding

- Germany introduced an independent body, with a mix of Government and private sector representatives, and free-riding is going down.
- Visibility of fees paid for single-scheme, non-profit PROs, and a public register for competitive markets provides a method of control and audit.
- Fees could be cross-referenced with VAT systems, or there may be lessons from how the postal service charges the recipient for relevant taxes.
- The concept of an authorised representative is vague in the Waste Framework Directive, but is clearer in the WEEE Directive.
- Fee modulation should be applicable to all market players, including e-commerce.
- The de minimis threshold should be as low as possible in order to avoid free-riding.

### Essential Requirements

- Some participants suggested the Essential Requirements have proven effective as they are generally complied with and there are examples of industry improving the recyclability of its packaging/ reducing packaging.
- It is important to consider trade-offs between levels of the waste hierarchy (prevention vs recycling). For example, lightweighting does not necessarily support circularity. On the other hand, new design requirements as laid down in the draft Single Use Plastics Directive (e.g. tethered caps for single-use plastic beverage containers) will increase packaging weight whilst reduces littering.
- Packaging serves multiple functions which must not be overlooked. The design of packaging consists of finding the right compromise between packaging's ability to fulfil all these functions and environmental considerations.
- Separability of materials is an important factor to be considered.
- A flexible approach allows for innovation, e. g. via regular revision of systems (example: German packaging law).
- Different routes of recycling should be feasible ☑ technology neutrality.
- A revision should take into account functionality and circularity. Perceived "over-packaging" may be designed to extend shelf life.
- Black plastic may not be easy to recycle using current technologies, but black plastic can incorporate recycled content and technological advancements (e. g. black pigments which do not interfere with IR sorting) could mean it is more easily processed in the future.
- Improved communication with design teams could help.

- Need to harmonise terminology across the Waste Framework Directive, the Packaging and Packaging Waste Directive and the Standards.
- Standards are vague and do not include metrics.
- A life-cycle approach is needed to consider transport and cleaning requirements for reuse.
- The packaged product’s life-cycle (e.g. transport, shelf-life, food waste) also needs to be considered. Changes to packaging design can have environmental consequences for other stages of a packaged product’s life-cycle.
- Chemical recycling was discussed. While some stakeholders stressed the potential benefits for e.g. recycling materials which cannot be mechanically recycled and for producing virgin quality, others stated that scalability and LCA benefits (energy balance) need to be proven.

## Potential Reinforcement of the Essential Requirements

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The workshop presentation highlighted the following points for discussion.

- The Essential requirements are to be reinforced with a view to, inter alia, improve design for re-use and promote high quality recycling, as well as strengthening their enforcement (PPWD, Article 9.5)
- The Essential Requirements should also support the aspirational target for all plastic packaging to be reusable or recyclable in a cost effective manner by 2030, but there are different interpretations of “cost effective manner”.
- There is a question of how general or specific the Essential Requirements should be.
- There needs to be some process for allow for innovative new packaging to be placed on the market.
- Options for reinforcing the Essential Requirements include:
  - Supporting measures for the existing Requirements, such as economic incentives, performance indicators, awareness raising and packaging prevention plans.
  - Revision of the CEN Standards.
  - Reformulating the Essential Requirements in the Packaging and Packaging Waste Directive.
  - Developing EU and/or national guidance to help Member States better implement and enforce them.

### Discussion

Participants raised the following points during the subsequent discussion.

- Essential Requirements and EPR are two sides of the same coin so there needs to be a co-ordinated approach and harmonised definitions. EPR can provide an economic instrument to support the Essential Requirements.
- Cost effectiveness cannot rely on municipalities alone, given that it is a value chain. It should reflect a shared responsibility.
- In a circular economy, the focus should be on increasing the proportion of material that is placed back on the market — through material recycling — and achieving this in a cost effective manner (with reference to the commitment in the EU Plastics Strategy for all plastic packaging to be recyclable in a cost effective manner by 2030).
- Up-front investment in infrastructure, knowledge and end-markets will reduce costs in the long-run but it is not clear how best to take account of this initial investment.
- Some producers are keen to know that certain types of packaging will not be banned or made prohibitively expensive because it needs to be considered as part of a life-cycle approach.
- There was some support for the existing flexible approach on the basis that it has not prevented improvements, but it was recognised that enforcement could be improved. A flexible approach would also allow for ongoing and future innovation.
- The Essential Requirements can be incorporated into green public procurement.
- Harmonisation requires a general, not too prescriptive, approach.
- Industry is in favour of harmonization in order to preserve access to the internal market. It has to be seen what can be achieved with a current flexible and decentralised approach foreseen under the EPR and what are the themes that need to be regulated with the Essential Requirements.

## Conclusions

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Throughout the discussions, a number of participants emphasised the importance of harmonisation across Member States to support free movement, reduce the burden of compliance and prevent conflicting priorities. It was also noted that capacities, technologies and costs will vary between Member States, which may support a more flexible approach, underpinned by consistent principles.

In terms of the Essential Requirements study, there was a concern that the term “problematic packaging” may neglect functionality and wider considerations beyond the ease of recycling and hamper innovation. It was suggested that some of the packaging types identified as ‘problematic’ may have higher recycling rates in some Member States. The existing use of the Standards was not a major focus of the discussion but, as previous studies have highlighted, it was noted that enforcement of the Essential Requirements could be improved. A number of participants commented that packaging

innovation should not be stifled and that the study needs to take into account the potential for recycling technologies to be further developed.

Discussions relating to EPR did not lead to a consensus on how to prevent free riding or an agreed approach to eco-modulation, but those who commented on equal treatment seemed generally to agree that an inclusive approach would rely on reducing the compliance costs for smaller businesses, while avoiding free-riders as much as possible. In terms of necessary costs, there seemed to be a common perception that these will vary significantly, especially as producers cannot control all aspect of the costs. Finally, a value-chain approach was another frequent theme, so that packaging is not considered in isolation from the packaged product, collection/ sorting/ recycling systems or from the end-markets.

Next steps:

- Workshop summary circulated
- 15 good practice case studies carried out related to Essential Requirements (e.g. why companies have phased out or switched their packaging).
- One to one discussions/ interviews – possible over the next couple of months.
- Position papers/ ideas welcome on options to reinforce ERs.
- Data requests related to impact assessment (cost of implementation, changes in packaging to business etc).
- ER: 2nd workshop on draft options before the summer break, further details will be circulated soon.
- ER: final workshop in September

## **A.8.4 Summary of First WEEE and Batteries Workshop**

# Study to support preparation of the Commission’s guidance on the implementation of the general minimum requirements for extended producer responsibility schemes set out in Article 8a of the revised Waste Framework Directive

Report on WEEE and Batteries Stakeholder Workshop held on 12 March 2019

Date: 31 May 2019

Author: Alice Thompson, Orla Woods

## Summary of Workshop Aims

The aim of the workshop was to share experiences and discuss issues arising in respect of:

- Ongoing and planned approaches to tackling **free-riding** for WEEE and batteries;
- Current actions and thinking on the approach to ‘**necessary costs**’ and ‘**equal treatment**’; and,
- Existing, planned and potential approaches to **fee modulation**.

The workshop contributes to the initial information gathering phase of the work, and provides the study team with an opportunity to benefit from the experience and expertise of stakeholders.

## Summary of Introductory Presentations

### Introduction to EPR Minimum Requirements as they affect WEEE and Batteries

Mark Hilton of Eunomia introduced the EPR minimum requirements, and outlined their impact on WEEE and batteries. Article 8a of the revised Waste Framework Directive lays out the general minimum requirements for extended producer responsibility schemes which Member States are required to apply.<sup>296</sup> Key elements of relevance to the workshop are included below.

Under Article 8a (1), Member States shall ensure that EPR Schemes:

- ensure **equal treatment** and non-discrimination of producers (origin, size, regulatory burden for SMEs).

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<sup>296</sup> European Parliament and the Council of the European Union (2018) Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on Waste, 2018/851

Under Article 8a (4) Member States shall take the necessary measures to ensure that the financial contributions paid by the producer of the product to comply with its extended producer responsibility obligations, in the case of collective fulfilment of EPR obligations:

- are **modulated**, where possible, for individual products or groups of similar products, notably by taking into account their **durability, reparability, re-usability and recyclability** and the presence of hazardous substances, thereby taking a life-cycle approach;
- do not exceed the **costs that are necessary** to provide waste management services in a cost-efficient way. Such costs shall be established in a **transparent** way between the actors concerned.

Article 8a (5) states the following:

*Member States shall establish an adequate monitoring and enforcement framework with a view to ensuring that producers of products and organisations implementing extended producer responsibility obligations on their behalf implement their extended producer responsibility obligations, **including in the case of distance sales**, that the financial means are properly used and that all actors involved in the implementation of the extended producer responsibility schemes report reliable data.*

The European Commission is interested in identifying existing practices and experience, and possible solutions, to tackle “free-riders” (i.e. market operators that circumvent extended producer responsibility and related obligations, such as registration, payment of fees etc., through, for example, under-reporting of what they place on the market, or completely avoiding any engagement with their responsibilities, which has been identified as a problem that can arise with distance sales)

## Introduction to the Study on Extended Producer Responsibility (EPR)

Chris Sherrington (Eunomia) provided an introduction to the study on EPR. His slides are provided as an attachment with key points summarised below. Chris provided a summary of the timeline of the project, including the key phases of work. This is summarised below:

- Task A: Review existing practice on fee modulation across the EU
  - Desk study
  - Stakeholder workshop<sup>297</sup>
  - Review of impacts of modulation
    - Stakeholder Interviews
    - Literature Review

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<sup>297</sup> This is the phase of the project which this report relates to. There will be a second stakeholder workshop later in the project.



- Reasons why modulation is not further used
- Shortlist items to consider for fee modulation
- Task B: Criteria for modulation of fees
- Task C: Process and Methodology to Define Fee Modulation
  - Develop list of key principles
  - Agree the principles with the steering group
  - Elaborate principles in guidance
- Review and finalise outputs for Task 1
  - Second Stakeholder Workshop – test preliminary findings
  - Finalise criteria and principles

Summary of points for discussion in this workshop:

- Discussion of necessary costs – in line with paragraph four of Article 8a of the amended waste framework directive (2008/98/EC, as amended by 2018/851)<sup>298</sup>
  - To identify existing EPR schemes which are required to apply some concept of ‘necessary costs’;
  - This will continue into further information gathering via stakeholder interviews and literature review; and
  - These processes will result in the development of a guidance document regarding efficient service delivery.
- Discussion of equal treatment
  - Looking to identify variable contributions and *de-minimis* exemptions under current EPR schemes;
  - Begin to identify and analyse disproportionate burdens; and,
  - To contribute to developing an operational definition of equal treatment which will be refined and tested with stakeholders at the second workshop. Guidance will be developed on criteria to ensure compliance with the principle of equal treatment.
- Discussion of best practice to tackle free-riders
  - The study will look to identify the main categories of free-riding, and product groups concerned alongside the actors which should be involved in effective action against free-riding. This will be informed by gathering evidence of existing practices and stakeholder experience. The workshop involved an initial discussion around free-riding.
- Discussion of fee modulation
  - To consider issues including:
    - What are the most appropriate criteria for modulation?
    - How can cost coverage be ensured where fees are modulated?
    - How can visible fees be shown where fees are modulated?

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<sup>298</sup> European Parliament and the Council of the European Union (2018) Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on Waste, 2018/851

- How can modulation best work in a situation where there are competing PROs?

## Summary of Topic Discussions

### Online sales/distance selling/free-riding

The topic of online sales, distance selling and free-riding was introduced with a short presentation from Mark Hilton (Eunomia), summarising the background and key issues. This presentation is available as an attachment, and a summary included below. The presentation made reference to previous work for the OECD on similar issues – [this report can be viewed in full here](#).

#### Issue of the “Authorised Representative”

- Under Article 8a (5) of the WFD, distance sellers can appoint an authorised representative – this is already in the WEEE Directive and a requirement where producers are not registered directly.
- Member States may lay down requirements, such as registration, information and reporting requirements, to be met by a legal or natural person to be appointed as an authorised representative on their territory

#### E-commerce Market Trends

- 18% growth in online sales in the EU between 2014 and 2015.
- EEE is the second largest category by value
- 20% of online shoppers purchased from outside the EU in 2016
- Some platforms have very large market shares (Amazon, Ebay, Alibaba). In 2016, 43% of online retail sales went through Amazon in the US (data not found for EU).

#### Key issues for EEE EPR

- Free-riding that consists of not undertaking physical ‘take-back’ obligations leads to lower collection rates for end of life products
- Free-riding by not paying EPR fees challenges the financing of waste management activities, imposing an unfair cost on other producers and retailers
- Free-riding by not reporting, results in under-estimating the number of products placed on the market and potentially over-estimation of national recycling rates, with no real incentive for the MS to resolve this.
  - It was recognised that this could be by producers free-riding and not reporting the amount placed on the market at all, or could result from larger producers under-reporting the quantity placed on the market.

#### Multi-Seller Platforms can legally avoid obligations

- Often it is the largest, best-known multi-seller platforms that are, **legally**, avoiding their obligations

- Marketplace platforms are not the seller or the importer, so legal obligations don't apply to them. This is a big loophole as the importance of the platforms was not recognised when the legislation was developed
- In relatively small markets where the company has no physical entity, it's particularly difficult to engage. Mark mentioned that (as reported by Amb3E) none of the major internet sales platforms are registered with a PRO in Portugal.
- The overall scale of the online free-rider issue is widespread and likely to be 5-10% of the EEE market on average – and far greater in some EEE categories.
- The EPR issue links to others around tax avoidance, counterfeits etc.
- Package forwarding models, including companies such as Borderlinx, Viabox and Myus add complication in that even where companies try to block export (e.g. as some US sites do beyond Canada/Mexico) this can be circumvented.

### Issues with small EEE

- Small EEE is a bigger problem – reflected in data. Recolight note that for some categories, over 70% of sellers (some small brands in the Far East) are not registered against only 8% for washing machines for example – which are dominated by large brands and which need physical warehousing in the EU market prior to delivery.
- Small EEE can be posted direct to consumers or direct via a courier and without even passing through a 'bricks and mortar' fulfilment centre.

### Summary:

- EEE EPR free-riding is a serious and growing problem.
- The online multi-seller platforms are a very large part of the 'problem'.
- Overseas sellers are confronted with a confusing array of legislation – not just across Europe. It would be helpful if the EU position at least was harmonised as this would contribute to aiding awareness raising.
- The authorised representative concept is something which may be helpful for those who understand their obligations but a lot of organisations don't – in general it is not seen as an effective mechanism.
- Enforcement is resource intensive, and would need to be well co-ordinated across jurisdictions to be effective.

### Potential Solutions

- Awareness raising for producers and consumers – e.g. web site codes of practice/labelling of EPR registrations;
- Better enforcement and co-ordination within and between MSs – including tax, customs and trading standards authorities;
- Significantly greater obligations for multi-seller platforms; and
- Development of potential technical solutions (e.g. block-chain and smart contract related).

## Presentation – Marc Guirard (Eucolight)

Marc's slides are provided as an attachment with a summary of key points below.

### Scale of the Problem

- Marc highlighted the high percentage of unregistered products on a leading online marketplace. These rates were up to 88% in the case of fitness watches, but were high across a range of categories.

### The Issues Generated

- Free-riding reduces the sustainability of EPR systems through risk of underfunded waste streams and the non-achievement of environmental outcomes.
- Compliant operators are placed at a disadvantage. Costs of compliance can make up a significant proportion of sale cost, and the motivation for compliance is reduced as legitimate operators pay more.
- Consumers do not understand the problem and therefore may contribute to it by purchasing from non-compliant sellers.

### The Fulfilment House Model

- An example was discussed of fulfilment house models. Products are imported from outside the EU, via bulk shipment to a fulfilment house within the EU who then pick/pack/ship to consumer, fulfilling the order.
- It is unclear who is liable as the producer/importer under this scenario – the 'platform' is neither importer or seller.

### Eucolight Preferred Solution

- Suggested a solution where online platforms are considered as the producer of all products within EPR scope sold on the platform, unless the producer is already registered for all applicable EPR.
- Nothing in the WEEE directive prevents MSs taking this approach individually at present. Some examples were provided of individual MS action to date on online sellers:
  - France announced that online market places will be considered WEEE producers;
  - Germany's national packaging legislation now captures online marketplaces; and,
  - The UK government is consulting on solutions (for packaging at present) to tackle online non-compliance of EPR regimes – making those that 'facilitate import' the producer.
- Would like to see robust enforcement action to include the seizing and destroying of non-compliant stock.

## Discussion on Online Sales and Free-Riding

Key themes which arose during the discussion are summarised below, including points which were made in relation to those themes or examples which were given.

### **Free-riding is especially profitable for certain products**

- The example of batteries was discussed where the obligation for importers is less well-defined than WEEE, although essentially a producer is anyone who places on the market.
- Due to the low cost of batteries, and relatively high cost of treatment, the EPR charges can be very significant – around the unit sales price and hence it is very profitable to evade the fees.
- An example was also given of imitation/counterfeit products being sold on multi-seller online platforms, none of which were registered. It was highlighted that such products which do not conform to the same safety or environmental standards could be a problem.
- While free-riding helps Member States to meet recycling targets (due to low PoM figures), there was no evidence to show that free-riding is deliberately used to avoid MS obligations. It was noted that additional information is requested against Eurostat submissions where MSs are missing targets or significantly exceeding them.

### **Authorised Representatives – Experiences**

- The authorised representative requirement creates problems for small retailers who want to sell across borders – the WEEE legislation requires an authorised representative in each MS (although not the Batteries Directive)
  - This is required for every MS in which products are sold and creates a burden for those placing small amounts on the market.
  - It was also mentioned that the use of “authorised representatives” was confusing and that there was a lack of clarity around what was actually required from such a representative and the level of responsibility they had.
  - Authorised representatives take on producer obligations and liabilities hence this can be barrier with some countries having no-one willing to take on the role.
- Discussion was had around the definition of producer to deal with online free riding, and it was confirmed that the WEEE Directive would not be re-opened at this point to adapt the definition of producer (which includes distance sellers), however the interest here was rather to give online multi-seller platforms them some form of obligation whether as a producer or otherwise. It was noted that Member States can adapt their own legislation to encompass multi-seller platforms.

### **Online Sellers and Take-Back Obligations**

- It was raised that online sellers evading their take-back obligations creates problems for local producers who may then be asked to collect end of life products on their behalf.
- It was recognised that overseas sellers and multi-seller platforms were not two distinct issues and that distance sellers often use such platforms.

- Physical cross border sales also exist and create free-riding issues – e.g. sales in Germany to Dutch or Danish buyers.

### **Harmonisation of Registration/Data Requirements and Guidance is Important**

- Stakeholders raised the issue that there are many differences between MSs and that harmonised rules should be introduced.

### **Consumer Awareness Should be Increased**

- It was felt that consumers should be made aware of the issues with free-riders and that this may make them less willing to purchase products from free-riders.
- For some products there are safety issues with purchasing from free-riding sellers.
- There was a suggestion to put more responsibility on the consumer to be aware of whether producers adhered to their responsibilities.
- One stakeholder mentioned that they had developed guidance for public organisations to consider compliance, safety, and EPR under public procurement requirements.

### **Linking EPR and VAT**

- Multiple stakeholders suggested linking EPR with VAT and following the “VAT one-stop shop approach”. In the US those applying for VAT registration are also required to register for EPR in some States and the same approach could be applied in the EU.

## **Equal Treatment**

### **Presentation – Mark Burrows-Smith REPIC**

Mark presented on *de-minimis* exemptions. A brief summary of the presentation is provided below. REPIC is a producer led not for profit PRO.

#### **Experience with *de-minimis* Exemptions in the UK**

- Producers are defined as those which manufacture and sell in the UK, resell under own brand in the UK, commercially import for sale, or distance sell onto the UK market.
- Different thresholds are in place for WEEE, batteries, and packaging which makes for a confusing system as some producers will be placing all three on the market.
- It is worth recognising that regardless of the producer size, the products which are placed on the market will have an end of life cost. A large number of small producers can make as big a contribution to the market as a producer above the *de-minimis* threshold. Mark believes there are a large number of small producers in the UK.
- The UK system distinguishes between products which are household and non-household and doesn't recognise that most products are dual use.
- The cost of enforcement is a constraint on high recycling rates.

### **De-minimis and Distance Sellers**

- REPIC receive enquiries from sellers all over the world. Some to register, but some find out how complex it is and either don't sell or submerge, and REPIC don't hear from them again.
- Distance sellers might register their tonnage under the *de-minimis*. Or,
- They could claim as non-household to avoid having to declare.
- Regulatory enforcement is lacking around these loopholes.

### **Future Options**

- If we keep *de-minimis* can we connect to other form of legal registration - producers could be required to disclose in annual returns.
- Really difficult to enforce if the producer is not registered in a MS as it involves tracking down through a distribution network.
- Packaging consultation in the UK is looking at one option of scrapping the *de-minimis* requirements for packaging and passing the compliance requirement onto the wholesaler.

## **Discussion: De-minimis thresholds**

### **Use of Tonnage Thresholds**

- The UK has a 5 tonne threshold for WEEE, but this only simplifies the registration and reporting requirements – they still pay a small contribution as producers.
- Tonnage thresholds relate to very different numbers of units and levels of compliance costs depending on the product. 5 tonnes of LED lamps has a far greater compliance cost than 5 tonnes of washing machines. It would make sense to have different thresholds for producers of different product categories.
- Stakeholders recognised that there was a risk of producers “growing out” of being a small producer and going under the radar when they exceed the threshold. This would require regular checks on the amount placed on the market.
- An example was given of a Swedish system where small producers are exempt from take-back requirements but not from reporting requirements.

### **Reporting Example**

- Ireland don't have a *de-minimis* threshold for WEEE or batteries but they do for packaging.
  - The system has ~1000 members, and 900 of those contribute little to the market but have significant (monthly) reporting obligations.
  - Suggestion that there could be a threshold for some producer obligations such as reporting under EPR.
  - The small producers also require a lot of administrative and enforcement time.
- Recognised that PROs may not want time intensive small producers.
  - Equal treatment in regulation and in PROs is needed.

### **Burdening Small Producers**

- The question was raised of what constituted a disproportionate burden for small producers.
- Denmark has no *de-minimis* exemptions. Companies have to provide an audited report of what's placed on the market – this can be expensive, especially for small producers.

### **Fee Modulation: Experiences to Date and Challenges**

Eunomia summarised the requirements for fee modulation under the revised Article 8a of the Waste Framework Directive (2008/98/EC). Presentations were given by stakeholders on experiences to date on the modulation of fees.

### **European Recycling Platform (Landbell Group) – Thomas Fischer**

Thomas' presentation has been included alongside this workshop note as an attachment. A brief summary is provided below.

- The Landbell Group are a pan-European producer responsibility organisation (PRO) who offer consultancy, assisting producers to understand their responsibilities and who develop software solutions to assist with PRO operation.

### **Importance of Harmonisation**

- Harmonised approach to modulation is required, this is important as it ensures the smooth functioning of the internal market;
- EU harmonised criteria are desired to avoid different national systems of modulation;
- This can also ensure that there is a level playing field across the EU with respect to fee modulation.

### **Guidance**

- PROs need to set clear design criteria/guidance for their modulation to producers.
- The WFD's provisions lists aspects to consider but are not specific, and are open to interpretation.

### **Setting Harmonised Criteria – Challenges**

- There are challenges – products are designed for multinational markets and a huge variety of products would need to be covered.
- Want to address the relevant aspects of the WFD but avoid interference with other EU legislation such as the Ecodesign directive, RoHS and REACH.

### **Setting Harmonised Criteria – Proposal**

- Criteria should not be defined by national authorities, or by PROs, and PROs should not set the modulated fees;



- All actors should be engaged to set the criteria for modulation, which should be relevant to the WFD and not duplicate what is in existing legislation, for example to go beyond minimum legal requirements such as RoHS.
- The criteria decided should be checkable and enforceable, and not destructive.
- Regular revision of the criteria is important to ensure continued impact, and ensure that they reflect technical progress.

### **Roles, Responsibilities and Enforcement**

- PROs need reliable information, and roles and responsibilities in the system must be clearly defined.
- Producers' claims may need to be checked/verified. The system needs a method for preventing damage to compliant producers through false claims.
- Harmonised provisions for trustable evidence documentation and implementation of a proper enforcement process will be required. Harmonised rules for cross border sales are also needed.
- Well defined sanctions are required in the case of non-compliance including reimbursement of damages due to false claims.

### **Financial Mechanism - Challenges**

- Modulation can incentivise producers to change product design by applying a bonus or malus. However, this will likely increase administrative requirements.
- Need to ensure the level playing field among PROs since licensed volumes and collected volumes are not linked.
- Competition laws hinder discussions of PROs on modulation and pricing.
- PROs should be able to discuss the mechanism for modulation- competition authorities make this difficult for PROs in Germany at present.

### **Financial Mechanism - Proposals**

- Sufficiently high financial impact of the amplitude of fees to create a steering effect.
- Simple two level amplitude with malus or bonus fee expressed as a percentage of the PROs standard fee.
- Amplitude shall be applicable to all PROs.
- Supported by a legally defined clearing mechanism.

## **EEB – Peter Barczak**

Peter's presentation has been included alongside this workshop note as an attachment. A brief summary is provided below.

- Peter's presentation and ideas were initially targeted to packaging but are still relevant for the discussion of EPR for WEEE and batteries.
- Discussion of a vision for an integrated product policy framework, featuring minimum design requirements around durability, ease of use, disassembly and reparability, as well as recyclability and removal of hazardous substances.

- Modulation has to be significant to move the producer's design up the waste hierarchy. This links to the steering effect which was mentioned by Thomas.
- Public procurement criteria should go above these and aim higher.
- The top of the pyramid described would be product labels looking at the eco-design of certain products and providing labels of excellence.
- Suggested a scoring system for reparability criteria:
  - Availability of spare parts;
  - Repair manuals;
  - Disclosure of substances of concern; and,
  - (ease of) Disassembly.
- Recycled content in new products could be an additional criteria. Could start at a threshold percentage ~30% where the modulated fee decreases as recycled content included increases.

In addition – Peter described core principles for circular products as:

- Durability and ease of reuse, including disassembly and repair;
- High value retention and recyclability of materials; and,
- Removal of hazardous substances.

## Mark Dempsey – Digital Europe

A brief summary of this presentation is provided below. Digital Europe are the trade association for digital industries.

### Introductory Points

- Mark emphasised the importance of avoiding a situation where MSs create their own criteria on modulated fees. This would create a diluted set of incentives which may not be consistent, and may not be sufficient to change product design.
- Individual MS led criteria would also create an administrative burden for producers, and generate little environmental benefit.

### Key Principles for Criteria for Fee Modulation

- 1) Criteria should be **aligned with existing standards** and ecolabels to generate greater rewards for good product design and reduce the administrative burden.
  - a. This will also amplify the message from ecolabels which already exist
- 2) It is vital that the criteria used to differentiate the financial contributions paid by producers are **harmonised between Member States** to provide consistent incentives and rewards to manufacturers; but,
- 3) Implementing harmonised criteria **should not disrupt existing Member States WEEE systems**. Whereas the criteria for modulated fees should be determined at EU level, the mechanism and amount of adjustment should be decided at national level.
  - a. Mentioned the benefit of maintaining competition between PROs and says that this reduces the cost of compliance.

- 4) Financial contributions paid by producers should **continue to fund collection related activities** and real end of life treatment costs and be based on the net costs of waste management.
- 5) Funding to national WEEE systems should remain **net neutral** – higher fees (malus) should be offset by lower fees (bonus).
- 6) Criteria should be limited to the **targets of the Waste Framework Directive** and not contradict REACH, ErP or other specific legislation.
- 7) The criteria used to differentiate the financial contributions paid should be **updated to reflect progress**.
- 8) Criteria should be **simple and enforceable** – want them to be checkable in an objective way and enforceable.

## Summary of Workshop Discussion on Fee Modulation

- The importance of **consulting relevant stakeholders and decision makers** on the criteria for eco-modulation was emphasised by participants
  - An example was mentioned from France whereby the authorities took a proactive role and brought actors together to ensure the eco-modulation scheme put in place was well supported.
- Participants agreed that **fee modulation must fit within the existing EU framework**
  - There was a suggestion that it should be based on an impact assessment and that modulation criteria should be evidence based.
  - Another participant stated that alignment with existing European standards is important – Cenelec standards (EN and TS) cover collection, preparing for reuse and treatment of WEEE, but are voluntary.
- **Simple, measurable, incentivising and verifiable criteria** were felt to be important aspects of the chosen criteria for modulation. This reflected the ideas that the speakers on fee-modulation had contributed.
  - A suggestion was made for starting with a simple scheme initially which can be developed in a progressive fashion.
  - Several stakeholders mentioned that developing reliable metrics for the criteria would be important (e.g. recyclability, reusability, recycled content).
- If recyclability is to be used as a way of modulating fees, then stakeholders felt that it was important to **involve recyclers in discussions** around what is meant by this.
  - The difference between products which were ‘technically recyclable’ and those which performed well in recycling industry processes was highlighted.
  - Mention was also made of the issue of imported products into Europe which may not adhere to the same production standards. This is a challenge which would need to be addressed.
- Additional issues around recyclability were raised following these points:
  - Traceability of what is in a product was mentioned, especially given that EEE products are likely to have a lifespan of years and hence will arrive at

recyclers after a prolonged time in circulation. It's important that it is obvious what the product contains.

- An example was mentioned of EEE products which contain lithium ion batteries but where this was not clear, and they were not easily separable. This creates hazards and inefficiencies for the recycling industry.
- **Common criteria may be difficult to apply to all products**
  - Stakeholders highlighted that problems may arise from applying common criteria to all products. Batteries were used as an example as all batteries contain hazardous substances and therefore couldn't be regulated with the same criteria as other EEE. It was also raised that it is difficult to incorporate recycled content into batteries as this had been proposed as a criteria for modulation. Energizer have started to incorporate some recycled content, however it is generally considered difficult to incorporate recycled content and maintain quality.

## Necessary Costs – Summary of Workshop Discussion

This discussion looked at stakeholder experiences of collection and treatment costs being managed, in a necessary way which ensured that producers were not paying over the odds.

### There is a link between product design and end of life costs

- For recycling of WEEE, one stakeholder from the recycling industry commented that the majority of the cost was associated with treatment/front end processing.
- There is an opportunity for producers to incorporate design features which make it as easy as possible at this stage, and which will in turn minimise the cost of recycling.
- The focus should be on designs which allow efficient material recovery and high yield. Designing to incorporate this would benefit from having clarity on the costs at each stage of processing.
- Efficient shredding of WEEE relies on high tonnage throughput and good yield. In turn this needs waste which isn't hazardous.

### Requirement for clear rules on the costs which are covered

- Necessary costs depend on what the goal of the EPR scheme is
  - Whether the goal is a circular economy or meeting a recycling target will result in different 'necessary costs'.
  - When circularity is put in place the emphasis shifts from meeting the requirements at minimum costs to maximising investment/reward/performance.
- There also need to be clear treatment standards. This is to ensure that there isn't a "race to the bottom" where treatment standards are compromised to reduce cost.

- At present, WEEE has a value for the resources contained in it.

### **Preventing cherry picking**

- For WEEE, standards for WEEE processing are a good platform where representative costs could be tested for the collection and treatment of WEEE and some academic groups are looking at existing standards to estimate the costs and benefits from their implementation.
  - These academic groups have made calculations about the advantages of competitors who don't comply with the standards.
  - The finding was that there is an advantage to be gained by schemes that cherry pick by selective collection of higher value WEEE fractions or fractions which are easier to recycle than others.
- One stakeholder highlighted that the challenge of ensuring necessary costs are paid varies by WEEE stream.
  - For large WEEE collection, return via the retailer and waste recycling sites can be reliable
  - Household collection of small WEEE is more challenging, it can be difficult to ensure that small WEEE enters legitimate collection at end of life.
- The end of life value of different WEEE streams varies, and this also needs to be taken into account.
- Clear rules are needed to ensure there is no cherry picking – whether by item or by geographical location. Fair competition (at least in collection and reprocessing) can be used to keep overall costs low.

### **Minimising the administrative cost of reporting**

- One stakeholder raised that 35% of the processing costs have to do with the necessary reporting and that there is no standard for reporting<sup>299</sup>.
- At present, different EPR schemes (PROs) around Europe follow different standards for reporting by producers and it would be helpful to have standard categories/sub-categories. The categories of WEEE provided under the WEEE directive decreased to six from ten which would be expected to simplify reporting requirements but didn't. The EPR scheme in Greece operates on 64 sub-categories, whilst the Netherlands operate on 11 categories<sup>300</sup>.
- Administrative costs should not be ignored and do add expense – an additional stakeholder mentioned an example from Belgium where clearance was required from each of the individual states for the transport of hazardous waste across the country. This added administrative burden, and time cost.

### **Competition to ensure cost-effectiveness**

- Competition (in combination with treatment standards) can be used to ensure the cost-effectiveness of EPR systems.
  - Law of competition can drive the cost effectiveness of the system
  - Austria was highlighted as an example where the first WEEE EPR scheme had high prices, and, as additional schemes were introduced the price (to producers) dropped.
- One delegate suggested that there is a need at least two PROs to provide this environment. These can be for-profit or not-for-profit. Stakeholders did not feel strongly that one was preferable to the other.
- While no-one advocated a single scheme approach per se, it was noted that the competition is only really important in the contracting of collection and reprocessing – and not necessarily in the administration costs which are relatively small.
- There are schemes such as WEEE Ireland that have a very high market share – WEEE Ireland for batteries for example which is representing 96% of battery producers.

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<sup>299</sup> OECD data on EPR indicates that admin costs are typically 5% to 10%

<sup>300</sup> The existence of sub-categories may make sense because reporting to a PRO is linked to the fees that producers pay for different products. The current 6 categories include 2 very general categories “small EEE” and “Large EEE” and hence these two categories include a variety of different products that may have different fees. Commission Implementing Regulation 2019/290 established the format for registration and reporting of producers of EEE to the national registers. When discussing the Commission Implementing regulation 2019/290 establishing the format for registration and reporting of producers of EEE to the national registers it was concluded that is not possible to standardise sub-categories under which producers report to the national registers or PROs.

- In this environment, standards are important to ensure that the same costs apply to the competing PROs – for example, if there is a requirement to provide consumers with information then all PROs should be required to do this, or split the cost of doing it.

## Summary of Workshop Themes

### Harmonisation – Fee Modulation and Necessary Costs

With respect to both fee-modulation and necessary costs, stakeholders felt strongly that harmonisation across the EU was very important to ensure a successful scheme with minimal burden to producers. It was recognised that having multiple different sets of criteria by which fees are modulated can result in a dilution of the environmental message/incentive, alongside increasing the administrative burden for producers. The criteria and factors used need to be the same across the EU even though the costs under each PRO may vary.

It was also noted that what is considered as necessary costs would differ under a scenario where the aim is to achieve a certain recycling target for WEEE/batteries, vs a scenario where the goal is to achieve a circular economy, although necessary costs in the context of Article 8a is more about cost-efficiency in meeting set targets rather than meeting additional targets. Further, it was noted that due to existing free-riding in the system, MSs may be overestimating recycling rates for WEEE and batteries due to underestimate of quantities placed on the market.

### Online and Distance Sellers

Issues of online and distance sellers were discussed widely during the workshop. It was recognised that multi-seller platforms were a key issue and effectively a Trojan Horse for distance sellers. Experiences with the existing “authorised representative” approach were discussed and it was recognised by stakeholders that this was not an effective solution given many free-riders are not actively seeking in-country representation.

Different solutions were proposed for ensuring that online sales did not lead to free riding. These included action to raise awareness among consumers, introducing better enforcement within and between MSs, making changes to how multi-seller platforms are regulated and looking into technical solutions.

### *De-minimis* Exemptions

Experiences of *de-minimis* exemptions were discussed. Different ways of applying such exemptions at present include sellers below a certain size (e.g. tonnage threshold for PoM) having simplified registration and reporting requirements, whilst still paying a small contribution as a producer, or being exempt from take back requirements but still needing to comply otherwise. In several schemes there are no exemptions, however, it was made clear that the administrative burden, both to the PRO (in having numerous small producers) and to the small producer, could be significant. It was also recognised that having different *de-minimis* thresholds for different categories of item could be fairer given how different charges can be for lamps vs washing machines for example.





## A.8.5 Attendee List for Second Packaging Workshop

Date: 15<sup>th</sup> October 2019

Organisation	
AIM European Brands Association	Free Pack Net Holding Sagl
APEAL	French Ministry for the Ecological and Inclusive Transition
APK AG	Greiner Packaging International
Ball Beverage Packaging Europe	Independent Retail Europe
BASF	ISO TC122
Borealis Group	Landbell AG
BRITISH AMERICAN TOBACCO	Mars Inc.
CEFLEX	Metal Packaging Europe
CEN-CENELEC	Milliken Europe BVBA
CEPI	Ministry of Environment and Energy (Directorate for Environmental Impact Assessment and Sustainable
CITEO	Ministry of Environment of the Republic of Lithuania
CONAI	Ministry of Environment of the Republic of Lithuania
Danish Chamber of Commerce	Ministry of the Environment Finland
Danone Waters	Ministry of the Environment of the Czech Republic
Dept of Communications, Climate Action and Environment	MTM Plastics

Organisation	
Dow Europe	Natureworks
Dr2Consultants	Nestle
DS Smith	Novamont SpA
Ecoembes	Orgalim, Europe's Technology Industries
ECOS	OVAM
Elipso	PAPACKS GmbH
Environment & Resources Authority (ERA)	PCEP - Polyolefin Circular Economy Platform
Environmental agency of Denmark	PetCore
Environmental Services Association (ESA)	PFS Public Health – Environment
EuRIC	Plastics Recyclers Europe
EuroCommerce	PlasticsEurope
EuropaBio	Polish Chamber of Waste Management/ Polska Izba Gospodarki Odpadami
European Aluminium	Polish Zero Waste Association
European Bioplastics	Reloop Platform
European Environmental Bureau	SCIAENA
European Investigation Agency (EIA)	Serred
European Plastics Converters	Sigfito Agroenvases, S.L.
European Retail Round Table	Sony
EUROPEN	Styrenics Circular Solutions (AISBL)
Excelrise	Suomen Uusiomuovi Oy/ Finnish Plastics Recycling Ltd
EXPRA	Swedish EPA

<b>Organisation</b>	
ExxonMobil	Tetra Pak
FEAD	The Alliance for Beverage Cartons and the Environment (ACE)
FEFCO	TIPA
FERVER	Toy Industries of Europe (TIE)
FEVE – The European Container Glass Federation	Valipac vzw
Flexpack Europe	Waste Management)
FNADE	Werner Mertz
Food Drink Europe	Zero Waste Europe

## A.8.6 Attendee List for Second WEEE and Batteries Workshop

Date: 16<sup>th</sup> October 2019

Organisation	
ACEA- European Automobile Manufacturers' Association	FEFCO
APPLiA – Home Appliance Europe	Free Pack Net Holding Sagl
Bebat asbl	Independent Retail Europe
Borealis	Ireland Department of Communications, Climate Action & Environment
BRITISH AMERICAN TOBACCO	Landbell AG
Brussels Environment (Brussels-Capital Region authority)	Ministry of Environment and Energy (Directorate for Environmental Impact Assessment and Sustainable Waste Management)
CEN-CENELEC	Ministry of Environment of the Republic of Lithuania
Danish Chamber of Commerce	Ministry of Environment of the Republic of Lithuania
Digital Europe	Orgalim, Europe's Technology Industries
EBRA ivzw (European Battery Recycling Association)	OVAM
Ecopreneur.eu	Plastics Recyclers Europe
EERA European Electronics Recyclers Association	Polish Chamber of Waste Management/ Polska Izba Gospodarki Odpadami
EPBA (European Portable Battery Association)	SCIAENA
Eucobat aisbl	Sony

<b>Organisation</b>	
Eucolight and Recolight	Stena Recycling International AB
EuRIC	Stibat
EUROBAT	Styrenics Circular Solutions (AISBL)
EuroCommerce	Swedish EPA
Eurometaux – European Association of Metals	The Ministry of Environment and Food of Denmark
European Environmental Bureau	Toy Industries of Europe (TIE)
European Plastics Converters	Trinomics
European Retail Round Table	WEEE Forum
FEAD	

**A.8.7 Summary of Second Packaging Workshop**

# WORKSHOP SUMMARY

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**Project Name:** Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Schemes : Packaging Stakeholder Workshop

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**Location:** JDE 52, Committee of the Regions, rue Belliard 101, Brussels

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**Time:** 9:30-16:30 15<sup>th</sup> October 2019

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**Attendees:** Eunomia: Chris Sherrington, Joe Papineschi, Alex Massie, Hannah Gillie, Tim Elliott  
European Commission Bettina Lorz, Olivier de-Clercq, Rozalina Petrova, Leonardo Mazza, stakeholders (see attendee list)

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## EPR - Fee Modulation

Chris Sherrington from Eunomia presented an overview of current approaches and future plans in respect of fee modulation for packaging in Member States. He then described the considerations in respect of possible criteria for modulation, including 'recyclability', recycling rate, reusability and recycled content, and their relative merits in the context of EPR. He outlined key principles to be applied in modulating fees, including the challenge of achieving positive change within the overall constraint of cost recovery, and issues relating to revenue stability when applying a bonus and/or malus.

He presented a recommended approach which focused on:

- Greater 'granularity' in respect of fee categories, to be more focused on specific formats;
- Adjusting these fees based on the format's contribution to the overall recycling rate: and
- Applying a bonus and/or malus within specific formats based on design for recyclability criteria.

Drawing on key principles he emphasised that the rate of change would depend not only on the magnitude of the financial incentive in any one Member State, but the extent to which a consistent signal was given to producers across all Member States – reflecting the desirability of an element of co-ordination between Member States.

### Key issues raised by stakeholders and Eunomia responses

- Should eco-modulation aim for a circular economy, prioritising prevention, rather than focusing on meeting recycling targets?
  - We have considered where modulation is best placed to bring about change, and where other policy instruments might be more appropriate. To the extent that base fees remain weight-based, an incentive to reduce the weight of packaging remains. To prevent waste through reuse, while EPR can and should be used to support such efforts (specifically in respect of tertiary packaging) – and certainly not hinder them - on its own it would not be the most effective instrument to achieve widespread uptake of reuse.
- Would it not be better to focus on design for recyclability (DfR) rather than the actual recycling rate by format?
  - The actual recycling rate by format is arguably the ultimate test of recyclability. However, this is data dependent, and will become more readily quantifiable over time. Accordingly, DfR can be used immediately to help move towards higher recycling targets, and then ‘fine tune’ through a bonus/malus within a recycling-rate adjusted fee structure.
- The need to consider functionality of packaging was suggested. How are some applications e.g. within the medical sector, taken into consideration?
  - The benefits of the functionality of the packaging are ‘internalised’ in the value of the packaging to the user. Modulation is a means of incentivising design changes through (in the above example) better reflecting both the end of life costs of managing the specific format, and the relative contribution towards achieving recycling targets. As such, modulation should lead to more appropriate decisions as to the choice of packaging format, balancing such fees against the functionality of the packaging (which of course relates to the nature and value of the product it contains).
- On the recycling rate adjustment, a point was made as to whether it would be more appropriate to compare recycling rates of the format against other formats that provide functional equivalence – e.g. liquid paperboard cartons to be compared against other beverage containers rather than against paper and cardboard, for example.
  - It was agreed that consideration would be given to relevant evidence on this issue that can be supplied by stakeholders.
- Is guidance for EPR modulation the best tool? Perhaps an implementing act would be better?



- The Commission responded that the first priority is to work on guidelines which cover the different issues needed by Member States for transposition.
- Have you considered modulating by lifecycle CO<sub>2</sub> emissions?
  - No, given the need to use criteria that are readily verifiable at reasonable cost. There would be significant data collection challenges in such an approach.

## EPR - Necessary Costs

Joe Papineschi from Eunomia described the scope of costs to be covered, noting that Member States may widen the scope of cost coverage to include non-recycled packaging, the costs of managing littered packaging.

He then presented the key principles and issues to be considered in respect of the 'necessary costs', i.e. in ensuring that producers pay no more than would be required for a cost-effective service.

### Key issues raised by stakeholders and Eunomia responses

- To what extent do the necessary costs include the costs of making recycled materials compared against virgin materials which are competing for the same end market applications?
  - That is not a consideration in respect of relevant costs, but a broader matter that could potentially be encouraged through the use of fee modulation, but preferably through a tax on virgin content.
- Have you considered optimal models e.g. high/low population density?
  - It's likely there will be an element of minimum collection standards in MS. Cherry picking the cheapest place contradicts the principle of full cost coverage.
- B2B schemes were noted as a good alternative to EPR schemes.
  - With regards to B2B, the legislation doesn't outline household waste separately. The guidance will need to account for necessary cost coverage looking different for B2B situations. It would be considered in the way individual schemes are designed- i.e. a different scheme/sub-scheme design for different categories.

### Clarifications from the Commission

- Regarding the price of secondary versus primary raw materials- the EPR schemes should be designed in such a way as to manage/adapt for these fluctuations.
- There are new provisions in the revised WFD regarding separate collection by municipalities.

## EPR - Equal Treatment

Alex Massie from Eunomia presented on the current application of measures that might be considered to support the concept of equal treatment, before outlining key principles and associated recommendations drawn from these principles.

### Key issues raised by stakeholders and Eunomia responses

- How do you ensure equal treatment of producers between schemes where you have competition?
  - Competition does add a further complication, and in applying the concept of equal treatment, the potential scope for competition is arguably reduced. This is an issue to which we will give further consideration.
- The Commission's decision on a 5% minimum threshold for reporting specific materials in composite packaging could have an impact. Has this been reviewed? Depending on the overall weight of packaging it was suggested that producers would have to report in more/less detail.
  - This has not been explicitly considered in respect of equal treatment. The aim of recommending that fees (including administrative fees) be based on the tonnage placed on the market is to seek to minimise the impacts associated with reporting requirements through, for example allowing for greater support to smaller producers from the EPR scheme.

### EPR - Free-riding and Distance Sales

Chris Sherrington's presentation outlined the variation in regulation by Member States and the current lack of co-ordination in respect of enforcement. He then presented possible mitigation options.

### Key issues raised by stakeholders and Eunomia responses

- Has account been taken of the WTO framework for online selling?
  - This is not something reviewed to date. The stakeholder concerned was asked to supply relevant information on this.
- On the suggestion that EPR schemes pay for enforcement activity, it was commented that this was unfair as they're the ones already suffering from paying.
  - Up to a certain point it might make financial sense for producers to fund (additional) enforcement (if the costs of doing so are outweighed by the benefits)
- How will the differences in multi-seller platforms be approached? Some are producer related and others only connect third party sellers.
  - We will consider this further including through contacting the relevant stakeholder

### Clarifications from the Commission

- The Commission is looking into online platforms in other fields, for example in relation to VAT. Agree that there should be a simple system for registration and the Commission welcomes feedback on this.

## **A.8.8 Summary of Second WEEE and Batteries Workshop**

# WORKSHOP SUMMARY

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**Project Name:** Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Schemes: WEEE and Batteries Stakeholder Workshop–

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**Location:** Room C, DG Environment, Avenue de Beaulieu 5, Brussels

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**Time:** 16<sup>th</sup> October 9:45-14:45

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**Attendees:** Eunomia: Chris Sherrington, Mark Hilton, Alex Massie, Hannah Gillie  
European Commission: Bettina Lorz, Olivier de-Clercq, Rozalina Petrova  
Stakeholders (Attached attendee list)

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## Fee Modulation for WEEE

Mark Hilton presented existing fee modulation practices in the French system, and outlined key principles derived from our work to date. He introduced the suggested modulation criteria of easy of disassembly and repair, and durability, discussed options in respect of the application of a bonus/malus, and addressed the question of visible fees and the associated potential for a colour coded labelling scheme.

### Key issues raised by stakeholders and Eunomia responses

- From a retail perspective, the energy labelling has a big influence on consumers. However, if there are too many labels on the product (including one that illustrates whether it has a bonus or malus) it may send mixed messages and defeat the purpose.
  - Possibly, albeit the tyre label is an example where different attributes (wet grip, rolling resistance and external noise) are reported side-by-side. All else being equal it should help to drive positive change.
- There were concerns about basing the fee on the purchase price of the device.
  - Eunomia clarified this point – the example referred to was not a bonus or malus based on a fixed percentage of the purchase price, but instead an indication that the magnitude of the bonus or malus could be up to 20%

of the purchase price, and that this might be required to provide a genuine incentive for change.

- Concerns were raised about a lack of harmonisation of approach across Member States given the current extent of variation in approaches, and the possibility that some may use a bonus/malus approach, and others may not.
  - Where modulation takes place, ideally the same criteria will be applied, meaning that although the magnitude of the modulation might vary, the direction would be consistent. It was emphasised that we are developing recommendations for guidance – they will not be mandatory.
- The question arose as to who should identify the products to be modulated. It was felt that the Commission should give guidance on this.
  - The guidance will suggest where modulation could best be applied – noting that it doesn't need to be applied in every category straight away. The point was reinforced that co-ordination between Member States such that they all modulated on the same products at the same time would send a stronger signal to the market.
- There was some concern that the criteria don't link to product end-of-life costs.
  - It was emphasised that within the constraint of cost coverage (for the scheme as a whole, if modulating, some products will pay more, and others less, than their actual end of life costs.
- The lack of a commitment regarding post-consumer recycled content was questioned.
  - It was clarified that we're not saying 'don't modulate based on recycled content', but that for WEEE the primary focus should be disassembly and reassembly, and durability.
- Support for eco-modulation but fear that each MS will take their own approach and that the Commission will be insufficiently proactive.
  - It was noted that at present the focus is on guidance

## Fee Modulation for Batteries

Mark Hilton presented the recommend approach to modulation for batteries. The presentation noted the rise of e-mobility batteries and explored modulation criteria including: weight, chemistry, battery system lifetime. Similarly to WEEE, a colour coding labelling system was discussed.

### Key issues raised by stakeholders and Eunomia responses

- The distinction between lithium ion batteries which do/do not contain cobalt was questioned, as was the difference between portable, industrial and automotive alkaline batteries of the same weight and composition.
  - It was agreed this would be discussed subsequently with the relevant stakeholders
- With regards to recycled content, it was noted that two companies which trialled recycled content have since ceased. The example of Energizer was raised.
  - It was agreed that further discussions would take place on this topic

- In the case of EVs, it was noted that the batteries have a positive value at end of life, and there was concern that fee modulation in this area could hinder the transition to electric vehicles.
  - Notwithstanding this example, there are many other examples of batteries on scooters, skateboards and bikes that don't necessarily end up back at service centres / with manufacturers.
  - How this interacts with the ELV Directive is important.
- One stakeholder felt that there were inconsistencies in the report with regards to eco-design and portable batteries. They also felt that the discussion around primary and rechargeable batteries requires more development.
  - These points were noted and will be discussed at a subsequent meeting with relevant stakeholders
- It was noted that there is a collection issue with regards to batteries sold within appliances.
  - To an extent this would be addressed through modulating for disassembly in WEEE

## Free-riding and Distance Sales

Mark Hilton highlighted in his presentation that online multi-seller platforms should be a priority. He outlined the French, Belgium, Irish and Dutch systems as examples of seeking to tackle free-riding.

### Key issues raised by stakeholders and Eunomia responses

- One stakeholder described the work they are conducting with Amazon in terms of compliance and reporting. One suggestion was that the platform provide the overall tonnage (of EEE, batteries and packaging) and pay fees to the relevant scheme.
  - It was noted that in the context of modulated fees, one approach would be to presume all items are eligible for a malus in order to incentivise the provision of further information. Simply avoiding engagement in modulation for EEE and batteries sold online would not be fair to those selling through other means.
- They also suggested that the size of the free-riding problem was lower in reality, at 5% by weight for all EEE.
  - This was questioned, given that the example was a weight based percentage covering the entire EEE market – allowing for the possibility of significantly higher percentages in categories such as lighting.
- It was suggested that the detail and examples of the presentation should in the guidance.
  - Given that we are in the process of developing recommendations for guidance, we cannot say for sure at this stage.

## Necessary Costs

Mark Hilton's presentation emphasised the importance of transparency and engagement with stakeholders and producers. The need to ensure costs are properly distributed across producers was also noted.

### Key issues raised by stakeholders and Eunomia responses

- It was emphasised that this should not be beyond the control of the producers. It was felt that if the producers are made financially responsible, they should be able to influence it.
  - Indeed – with financial contributions comes the right to ensure that services are being delivered cost-effectively – this is the essence of necessary costs.

### Equal Treatment

Alex Massie's presentation outlined the necessity that producers are treated equally regardless of size, the importance of accurate data and existing practices regarding thresholds. The principles of a *de minimis* threshold were discussed and recommendations were presented.

### Key issues raised by stakeholders and Eunomia responses

- The suggestion that the administrative element of fees should be pro-rated based on the tonnage placed on the market, and that there should be no use of *de minimis* thresholds to reduce the size of end-of-life fees, was welcomed. It was noted that much innovation comes from SMEs and they should be adequately incentivised through, for example, the opportunity to be eligible for a bonus.
- It was suggested that the reporting structure may benefit from harmonisation, but that MS may already have systems in place and will be reluctant to change.
  - The observation was made in response that producers should have a reasonable level of influence over PROs, and that they could themselves bring about greater harmonisation.

## A.8.9 Position Papers Reviewed in the Course of the Study

### A.8.9.1 Batteries

- EPBA (2019) EPBA's Comments to the Eunomia Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Schemes - Modulated Fees for Portable Batteries, November 2019
- EUCOBAT (2019) Position Paper: Modulated Fees for Batteries, November 2019
- FEAD (2019) *FEAD's Recommendations for EU Guidance on EPR Schemes: Additional remarks on WEEE and Batteries*, October 2019

### A.8.9.2 Free Riding

- EUCOBAT (2019) Position Paper: Impact of Online Sales on the Circular Economy, July 2019
- WEEE Forum (2019) Successfully Countering Online Free-Riders, April 2019

### A.8.9.3 Packaging

- AFISE et. al (2019) *Packaging Supply Chain Guiding Principles on EPR Fee Modulation & the Legal Review of the Essential Requirements for Packaging*, May 2019
- The Alliance for Beverage Cartons and the Environment (2019) *ACE - Position on EPR Fee Modulation and Beverage Cartons*, October 2019
- ARA, Der Grune Punkt, REPAK, Sociedade Ponto Verde, and Valpak (2019) *Position Paper on Modulated Fees to Assist Eunomia*, November 2019
- Austria (2019) *Austrian Comments on the Guidance for EPR-Schemes (Fee-Modulation) Commission's Guidance on the Implementation of the General Minimum Requirements for Extended Producer Responsibility (ERP) Schemes According to Art. 8a Waste Framework Directive*, November 2019
- BASF (2019) *Essential Requirements for Packaging and Eco-Modulated EPR Fees*, October 2019
- CEPI, DTPA, and FEFCO (2019) *Feedback on Designing Fee Modulation in EPR: Eunomia's Study on the Commission's Guidance for EPR schemes*, October 2019
- Client Earth, Environmental Investigation Agency, European Environmental Bureau, et al. (2019) *Outlook - Essential Requirements (ERs) and Extended Producer Responsibility (EPR) Fee Modulation for Packaging to Meet the Objectives of the European Circular Economy Strategy*, May 2019



- Client Earth, Environmental Investigation Agency, European Environmental Bureau, et al. (2019) *Policy Proposal - Essential Requirements (ERs) and Extended Producer Responsibility (EPR) Fee Modulation for Packaging to Meet the Objectives of the European Circular Economy Strategy*, May 2019
- Ecopreneur (2019) *Feedback on EPR Guidance Workshops on 15-16 October 2019*, October 2019
- Ecopreneur (2019) *Ideas on Options for Reinforcing the Essential Requirements in EPR*, May 2019
- EEB (2019) *Discussion paper: Essential Requirements (ERs) and Extended Producer Responsibility (EPR) Fee Modulation for Packaging to Meet the Objectives of the European Circular Economy Strategy*, February 2019
- EPRO, P. (2019) *Eco-Modulated Fees as a Tool for a Circular Society*, February 2019
- EuRIC (2019) *Position Paper on the Review on Essential Requirements and Eco-Modulation of Extended Producer Responsibility schemes*, June 2019
- EuroCommerce (2019) *Input for the Workshop on Essential Requirements for Packaging*, June 2019
- European Aluminium, FEVE, APEAL, EUROFER, and Eurometaux (2019) *Discussion Points on the Review of the Essential Requirements for Packaging (PPWD)*, June 2019
- European Aluminium, The European Container Glass Federation (FEVE), APEAL, EUROFER, and Eurometaux (2019) *Discussion Points on Mandatory Extended Producer Responsibility (EPR) Schemes and Eco-Modulated Fees for Packaging*, October 2019
- European Bioplastics (2019) *Bioplastics: Essential Requirements of Packaging & Eco-Modulation of EPR Fees*, May 2019
- European Recycling Platform (2018) *Discussion of Practical Implications from the Point of View of a Producer Responsibility Organisation (PRO/EPR)*, June 2018
- EUROOPEN (2019) *Extended Producer Responsibility EU Harmonised Principles for National Modulation of EPR Fees for Packaging: EUROOPEN Recommendations*, February 2019
- EUROOPEN (2019) *Extended Producer Responsibility Principles for the Calculation Methodology of Packaging Litter Clean-Up Costs: EUROOPEN Recommendations*, March 2019
- EUROOPEN (2019) *Extended Producer Responsibility EU Harmonised Principles for National Modulation of EPR Fees for Packaging: EUROOPEN Updated Recommendations*, May 2019
- EUROOPEN (2019) *Study on the EC Guidance for EPR Schemes EUROOPEN Preliminary Comments to the Background Paper*, October 2019
- EXPRA (2018) *Towards a Common Approach to Modulated Fees*, September 2018
- EXPRA (2018) *Expert talk: "Eco-Modulation of EPR Fees as a Tool Towards a Circular Economy"*, October 2018
- EXPRA (2019) *Comments on Eunomia's Recommendations Regarding EPR Costs*, October 2019

- EXPRA *Essential Requirements: Proposed Approach*
- EXPRA (2019) *Eunomia's Study on Fee Modulation Preliminary Recommendations: EXPRA Reactions*, October 2019
- EXPRA (2019) *Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Schemes: EXPRA Reactions on Fee Modulation*, October 2019
- FEAD (2019) *EPR Schemes: FEAD's Recommendations for EU Guidance*, October 2019
- FoodDrinkEurope (2019) *Draft Principles on EPR Fee Modulation*, June 2019
- FoodDrinkEurope (2019) *Comments to the Essential Requirements and New Extended Producer Responsibility Rules in Relation to the Implementation of the Waste Framework and Packaging and Packaging Waste Directives Workshop Background Paper*, April 2019
- Free Pack Net (2019) *DG Environment Essential Requirements and EPR Workshop*, March 2019
- Free Pack Net (2019) *Projects to Reinforce Essential Requirements*, June 2019
- Free Pack Net (2019) *Comments to the Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Scheme: Circular Economy and Polystyrene Packaging*, October 2019
- German Packaging Value Chain (2019) *European Guidelines for Eco-Fee Modulation: Recommendations of the Packaging Value Chain in Germany*, October 2019
- Independent Retail Europe (2019) *EPR Studies: Comments of Independent Retail Europe*, June 2019
- Novamont (2019) *Novamont's Comment to the Workshop the 'Second Stakeholder Workshop on the Study to Support Preparation of the Commission's Guidance for Extended Producer Responsibility Schemes and Essential Requirements for Packaging'*, October 2019
- Plastics Europe (2019) *Modulation of EPR Fees*, August 2019
- Plastics Europe (2019) *Comments of EPR and ER*, October 2019
- Plastics Europe (2019) *Plastic Packaging – Essential Requirements for Resource Efficiency and Circularity*, October 2019
- Reloop (2019) *Comments on EPR and ER*, June 2019
- Rethink Plastic Alliance (2019) *Essential Requirements and EPR Modulation*, October 2019
- Serred (2019) *Position Paper*, October 2019

#### A.8.9.4 WEEE

- AFNUM (2019) *Experience Sharing on Modulated Fees Guidelines*, June 2019

- APPLiA (2019) Comments on the Draft Study from Eunomia to Support Preparation of the Commission’s Guidance for Extended Producer Responsibility Schemes, November 2019
- Arienti, G. (Board M. of the W.F. (2019) Thoughts Around Eco-Modulation
- DIGITALEUROPE (2019) Recommendations for the Modulated Fees Guidelines, March 2019
- DIGITALEUROPE (2019) Recommendations for the Modulated Fees Guidelines Including Suggested Examples for the Criteria that Could be Implemented for PCs, Imaging Equipment, TVs & Displays and Mobile Phones, October 2019
- EucoLight, and LightingEurope (2019) Comments Following the DG Environment EPR Workshop on 16 October 2019, October 2019
- EucoLight, and LightingEurope (2019) Meeting with DG Environment: EPR Study, November 2019
- European SH Network (2019) EPR Position Paper, October 2019
- FEAD (2019) Recommendations for EU Guidance on EPR Schemes: Additional Remarks on WEEE and batteries, October 2019
- Orgalim (2019) Position Paper: Eunomia Study in Support of Developing Guidance for Extended Producer Responsibility (EPR) Schemes: Comments on Modulation of Producers’ Financial Contributions, March 2019
- WEEE Forum (2019) Success Factors for Eco-Modulation of Fees: Response to the Consultation Regarding the Study to Support the Preparation of the Commission’s Guidance for Extended Producer Responsibility Schemes, April 2019

## **A.8.10 Meetings Attended**

### **Digital Europe Meeting**

Date: 23<sup>rd</sup> January

Eunomia attendance: Joe Papineschi

### **WEEE Member States Meeting**

Date: 7<sup>th</sup> February 2019

Eunomia attendees: Mark Hilton, Chris Sherrington

### **EXPRA/EXPRA/PROSPA Meeting Task force meeting**

Date: 12<sup>th</sup> February 2019

Eunomia attendance: Dominic Hogg, Joe Papineschi & Chris Sherrington

### **First Stakeholder Workshop**

Date: 11<sup>th</sup> & 12<sup>th</sup> March

### **Free riders meeting with Eucolight/WEEE Forum - 19<sup>th</sup> March**

Date: 19<sup>th</sup> March

Team attendance: Mark Hilton

### **Europen meeting**

Date: 8<sup>th</sup> April

Team attendance: Chris Sherrington

### **WEEE Forum Meeting - Basel**

Date: 12<sup>th</sup> May

Team Attendance: Mark Hilton

### **Bioplastics meeting with European Bioplastics Association**

Date: 15<sup>th</sup> May

Team attendance: Joe Papineschi

**HP Meeting**

Date: 17<sup>th</sup> May

Team attendance: Mark Hilton

**EXPRA/EXPRA/PROSPA Task Force Meeting**

Date: 12<sup>th</sup> September 2019

Eunomia attendance: Joe Papineschi & Chris Sherrington

**Member State Expert Group Meeting**

Date: 30<sup>th</sup> September 2019

Eunomia attendance: Mark Hilton, Joe Papineschi & Chris Sherrington

**WEEE Ireland Event (including Panasonic and Dell)**

Date: 15<sup>th</sup> October

Team attendance: Mark Hilton

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