

Competition in Select Extended Producer Responsibility Programs

Phase 1 – Jurisdictional Scan

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1.0 Study Description

1.1 Study Objective

The regulation of a designated material under extended producer responsibility (EPR) creates new markets and has a direct impact on pre-existing markets. The characteristics and scope of these markets (and their competitive dynamic) are determined by the relationships and interactions between obligated producers, between these producers and their producer responsibility organizations (“PRO” and in BC “stewardship agencies”) and between producers (and their PROs) and existing players such as municipalities and private waste companies.

The competitive dynamic of these markets is largely impacted by the obligations set forth for producers by governments under their respective EPR laws.

As such, this study addresses the first phase of the BC Ministry of Environment’s efforts to understand the relationship between EPR as a policy measure to hold producers responsible for the end-of-life management of products and packaging and competition as a market property that emerges as producers seek to discharge their responsibilities under EPR laws specific to a given jurisdiction.

The objective of this study is to describe the market dynamics of select jurisdictions with EPR laws with a specific focus on gaining an understanding of the interplay of factors shaping the competitive dynamic at one or more levels of producer compliance (e.g. competitive procurement of recycling services by PROs, competition between PROs in the same product categories and market segments, competition between a PRO and producers in the same product category and market segment).

Ultimately the findings of this Phase 1 effort will be used in subsequent activities to assess approaches to regulating EPR in British Columbia that lead to greater economic efficiency and environmental effectiveness.

1.2 Jurisdictional Scan

To achieve the study objectives we employed a jurisdictional scan that considers:

- Forms of competition within a regulated product category, between PROs or producers in the same product category and in delivery of the EPR programs;
- Relevant policy and legislation that govern EPR programs and competition;
- Regulatory oversight mechanisms;
- Elements of the framework in those jurisdictions where competition is occurring between PROs or producers in the same product category; and
- Economic and environmental outcomes.

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We expand on these considerations in discussing the development of the jurisdictional scan checklist in the 2.3 Scan Methodology section below.

2.0 Approach

2.1 Selecting Jurisdictions

Jurisdictions were selected to illustrate a wide variation in approaches to producer compliance – from one PRO for packaging to a few and to many – in order to gain insight into the competitive dynamics that arise from the design and oversight of EPR regulation and the markets that emerge.

Accordingly, the jurisdictions selected for the scan include:

- All member states of the European Union that have more than one compliance scheme for packaging;
- Two member states of the European Union that, by regulation, allow more than one compliance scheme for packaging but have licensed only one compliance scheme; and
- A member state of the European Union that began in 1992 with two compliance schemes for household packaging operating in parallel that subsequently merged in 2005.

Jurisdiction Characteristic	Jurisdiction
Multiple compliance schemes for packaging	Austria Bulgaria Germany Poland Romania UK
Allows multiple compliance schemes for packaging but has licensed only one	Belgium Ireland
Began with two compliance schemes for packaging that merged into a single scheme	France

2.2 Characterizing Markets – the Scan Checklist

A market is essentially defined by the interaction between buyers and sellers of goods and services. Government involvement in the market either through legislation, policies or direct participation can have a significant impact on existing markets. EPR creates new markets as producers seek to buy recycling services in order to discharge their end-of-life obligations for their products and materials. How producers organize themselves to do this (individually, as members of a single PRO or members of multiple PROs) and how they engage with service

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providers is to a very great extent determined by the specific requirements of the EPR law in question.

The scope and intensity of competition that prevails and, whether the market interactions are more or less economically efficient or environmentally effective is determined by the behaviours a given law requires or pressures market participants manifest as a result of the law.

As such, determining the competitive dynamic of these markets involves assessing the obligations set forth for producers by government under law. These obligations typically include:

- Any regulatory flexibility or restrictions, requirements or incentives that affect how producers comport themselves in order to discharge their EPR obligations:
 - Where the law requires or facilitates a single PRO to be established, the rationale for affording a monopoly and whether there are regulatory checks to ensure that it operates in the public interest and to the benefit of all citizens as opposed to just those afforded monopoly power; and
 - What checks are in place to ensure the monopoly PRO will continue to strive to achieve cost cutting measures and other dynamic efficiencies (innovation) in the absence of competition.
- Whether both residential and industrial, commercial and institutional (ICI) materials are addressed by the EPR requirements and how the materials collected from each sector contribute to national recycling targets (ICI materials are less costly to collect and recycle);
- The scope and nature of geographic service requirements (universal coverage requirement or other accessibility targets to ensure producers provide convenient collection across the jurisdiction in question);
- The stringency and material specificity of recycling targets (i.e. higher targets demand more aggressive and wider collection of materials while material specificity demands more targeted efforts for particularly challenging materials);
- Any requirements to address and/or incorporate collection and management systems that exist prior to regulation (i.e. requirement to use municipal collection or management systems with concomitant producer 'funding' of those systems; to work with NGOs, charitable organizations; to preferentially hire persons with disability etc.);
- Any geographic restrictions on where materials can be processed (in-jurisdiction management requirements) or used (based on minimum operating or environmental standards); and
- Definitions of recycling that preclude certain end-uses of materials (e.g. burning of plastics as energy-from-waste or use of materials as fill etc.).

Additional factors that affect market dynamics include:

- The requirements of the competition laws relevant to the jurisdiction in question e.g. provisions dealing with cartels, price fixing, abuse of dominant position and mergers;
- The effectiveness of EPR and competition law regulatory oversight:

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- The capability of the regulator to enforce various responsibilities that have been placed on producers, their PROs and other parties (e.g. approvals or recycling standards on waste service providers);
- Where there is more than one PRO, how the regulator ensures all PROs report to the regulator accurately;
- Where there is more than one PRO and an existing common collection network (e.g. curbside collection of designated materials from households) how the regulator ensures agreement among PROs regarding delivery of the collection service and allocation of collected materials among themselves or, failing that, allocates the common collection network or the materials collected in that network to each of the multiple PROs; and
- Where producers operate as a sanctioned monopoly, how the regulator ensures that the PRO does not unduly restrict competition beyond that which is necessary to meet the EPR requirements and operates in an economically efficient manner in the absence of competition.

The factors listed above provide for a characterization of the market dynamics arising from the legal framework within each jurisdiction selected for the scan.

The checklist reflecting this approach is included as Appendix A.

2.3 Scan Methodology

The scan involved an on-line search and contact with individuals within government, regulatory authorities and producer responsibility organizations where details were not available on-line. Sources for the scan findings are cited throughout the jurisdictional scan tables in Appendices B through J.

3.0 Jurisdictional Scans – High Level Observations

3.1 One Policy Concept, Varied Laws, Varied Markets

Member states of the European Union (EU) must apply the EU's anti-trust (competition) policies as contained in the Articles 101 and 102 in the Treaty of the Functioning of the European Union (TEFU). They are also bound by Directive 2008/98/EC on waste (Waste Framework Directive) that sets out the fundamental concepts of the polluter pays and extended producer responsibility (EPR)¹.

¹ The Waste Framework Directive came into force on December 12, 2010 and requires member state compliance by December 2013. With regard to EPR it states, "Member States may take legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has extended producer responsibility".

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Member state competition laws and EPR policies (policies that may include both regulatory and non-regulatory measures) must be able to demonstrate the member state's ability to address the EU's legal requirements.

Member states have latitude in how they address the EU requirements in their own laws and policies and may employ a wide array of measures that include EPR legislation and regulation, disposal bans and economic instruments such as disposal levies and deposit-refund schemes. Accordingly, the regulatory framework and the institutions for implementing and overseeing regulated parties vary significantly from jurisdiction to jurisdiction.

Across jurisdictions, EPR is implemented with wide variation on the basic theme of holding producers responsible. Even something as basic as defining the producer is subject to member state interpretation. Who is responsible and how the sources of generation (residential or ICI) are to be addressed by producers are also subject to disparate policy treatment.

For example, Germany holds individual producers of products generating packaging waste legally responsible for delivering recycling outcomes while the UK allocates producers' responsibility formulaically across raw material manufacturers, packaging makers, packer/fillers, sellers and product importers.

Some jurisdictions separately regulate packaging from residential and ICI generators (e.g. Belgium) thus requiring separate compliance mechanisms while others, (e.g. UK, Poland) make no distinction and simply require achievement of national aggregate recovery and recycling targets.

Some jurisdictions provide special recognition of the municipal role in recycling (e.g. Belgium) while others such as Poland have only recently deemed that municipalities must have a regulated role in the collection of waste and recyclables (replacing the previous free-market commercial arrangements between private waste companies and households).

No jurisdiction scanned with one PRO mandates that there be only one PRO. However, the, "very specific supply-side conditions (network economies, disposal traditions of consumers, container instalment [sic] constraints)"² and the member state requirements for producer compliance layered on top of the supply-side conditions peculiar to household collection have often led to one PRO. This however, is not always the case and where multiple PROs service households the challenges of coordinating activities among them is evident.

The role of competition law can have a profound effect on producer compliance and thus on markets.

In Austria, the EU Director General of Competition has essentially deemed household collection services as an "essential facility"³ to which all PROs must have access. The result has been

² DG Competition Paper: Concerning Issues of Competition in Waste Management Systems. September 22, 2005.

³ Dr. Hanno Wollmann, Partner at Schoenherr Attorneys at law speaking on June 25, 2014 at the SME Europe Working Lunch: Emerging conflicts between Extended Producer Responsibility and European competition policy <http://www.smeeurope.eu/emerging-conflicts-between-extended-producer-responsibility-and-european-competition-policy/>

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new PRO entrants into the producer compliance market with a mandate that all PROs share the use (and the cost) of the existing common collection system.

Germany's EPR compliance market was the first to be the target of competition law enforcement (by the German competition authority – Bundeskartellamt or Federal Cartel Office – rather than the EU). Initial intervention and policy reform mandated by the Bundeskartellamt led to competition among service providers. Later competition intervention led to new PROs entering the market. Today, materials collected from households delivered to receiving facilities are allocated by relative market share to the nine operating PROs for processing and marketing. The cost of operating the common collection system is also allocated by relative market share among the nine PROs.

When a member state joined the EU also has a significant effect on the state of their respective regulatory frameworks and institutions overseeing EPR. Relatively new entrants to the EU (notably, Bulgaria, Poland and Romania) have rapidly implemented EPR in order to meet EU deadlines for implementation of the Waste Directive only to undertake successive regulatory reforms in an effort to address issues (e.g. producer free riding, more stringent geographic coverage requirements, lack of producer transparency and accountability etc.) that have arisen.

All jurisdictions scanned share one common feature – both their competition laws and EPR laws continue to evolve and develop. While certain PROs have been in operation for many years (notably Germany, Austria, Belgium and Ireland) they operate in a pan-European policy environment where the debates about policy design and effectiveness result in ongoing scrutiny and proposals for regulatory reform. None of the jurisdictions surveyed treat their EPR regulatory frameworks as static and all are actively striving for better oversight, enforcement and performance, as evident through numerous amendments to their EPR laws.

In summary, the approach to regulating EPR in concert with the institutional, historical, cultural and political differences between scanned jurisdictions leads to very different market outcomes.

This leads to a discussion regarding conclusions that can be drawn about the relative environmental and economic efficiency across the jurisdictions scanned.

3.2 Evaluating Environmental and Economic Outcomes

Ideally, an assessment of the environmental and economic outcomes associated with the market exchanges in any EPR jurisdiction involves assessing environmental effectiveness and economic efficiency. Specifically:

- Environmental effectiveness – how well the waste reduction or resource recovery objectives set forth by the jurisdiction in question are met.
- Economic efficiency – the ongoing reduction of cost in the production and recycling of packaging and products. It can be a function of leveraging economies of scale and network benefits associated with a collection and processing system. It can also emanate from competition between PROs, collectors, transporters and processors prompting them to

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maximize revenue and reduce costs through innovation designed to improve operational efficiency of existing practices. It can also be a function of innovation in product design resulting from producers seeking opportunities to improve recycling through product redesign.

Of note, the two metrics are interdependent. An outcome that fails to meet defined environmental effectiveness targets cannot be deemed to be economically efficient. An EPR compliance scheme that is low cost to producers and consumers but does not address the environmental problem at hand remains inefficient because the environmental and financial costs of waste continue to be borne by society at large (i.e. allocative inefficiency).

Economic outcomes need to be considered in the context of environmental outcomes - the very purpose of regulating EPR.

3.2.1 Environmental Outcomes – the Purpose of Regulating EPR

Care needs to be taken in interpreting the recycling results provided in the following figure as recycling rates can be over or understated, and therefore misleading, due to the following:

- Free riders (non-participating producers) cause recycling performance to be overstated because recycling rates are calculated based on the amount of packaging recycled as a percentage of the amount of packaging reported as supplied;
- Participating producers who under-report amounts of packaging supplied (in an effort to avoid fees) also cause recycling performance to be overstated;
- Double counting of collections where service providers provide services to more than one PRO can result in overstating of recycling performance; and
- The relative proportion of ICI recyclables in the total amount reported as recycled can mask low residential recycling rates (ICI materials are typically easier and less costly to collect and recycle).

Each of these issues speaks to the need for proper oversight of EPR to minimize free-rider issues while ensuring accountability, transparency and data accuracy.

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Figure 1: 2012 Recycling Rate for Packaging⁴ (Source: Eurostat)



3.2.1 Economic Outcomes

In practice comparing economic efficiency across EPR jurisdictions is difficult. What a producer pays on a per tonne basis to achieve compliance in one jurisdiction may be very different than another not only on account of the market dynamics resulting from the regulatory factors discussed above, but also due to inherent structural differences such as:

- Geography and population density;
- The state of national institutions and prevailing economic and political conditions with emphasis on the implication of those conditions on labour and general overhead costs;
- The maturity, competitiveness and regulation of the waste management sector;
- The presence of other waste related policy measures in support of EPR (e.g. disposal bans and levies); and
- The percentage of the system costs that the PROs are covering. Some PROs assume most (if not all) of the system costs (e.g. FOST Plus in Belgium) whereas others (e.g. UK, Romania) incentivize the system by providing financial incentives sufficient to cover the marginal cost between the amount of recycling that would occur in the free market and the amount necessary to meet member state recycling targets.

The interplay of factors affecting a market may be highly complex and no one factor can claim to contribute to economic efficiency in the absence of understanding that factor in the context of the other factors at play.

⁴ http://ec.europa.eu/eurostat/statistics-explained/index.php/Packaging_waste_statistics#Recycling_and_recovery_targets

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A specific example of drawing out-of-context conclusions about factors presumed to drive economic efficiency is the claimed producer cost savings attributable to additional PROs entering the German market after the latest interventions by the German competition authorities. As noted in guidance to the European Commission:⁵

- “The reduction of costs is presented by some stakeholders as the result of competition at the level of compliance schemes, as this competition has triggered the search for efficiency (producers may choose another PRO if he proposes to help him comply with lower fees). Additionally, flexibility can be reintroduced at the producer level (they are now offered choice between different compliance schemes) and at the level of waste management operators.
- Others highlight that the cost reduction is the result of competition eventually introduced at the waste management operations level. Following important financial difficulties in 1993, DSD had to sign 10-year long contracts with waste management operators, and therefore only started to launch calls for tenders for packaging waste collection and sorting in 2003.
- This illustrates that, even within a very specific case, which theoretically should allow for a factual comparison based on concrete evidence, the complexity of the situation and the interaction of several possible explanatory factors hinder drawing clear and definitive conclusions.”

So, while the table below summarizes producer compliance costs per tonne of packaging for the jurisdictions scanned, the reader should resist drawing any conclusions about the factors contributing to the differences in costs without a full understanding of the multitude of factors at play in each jurisdiction.

Table 1: PRO Fees as of January 1, 2014 ⁶ € per tonne excluding VAT							
PROs	Paper	Glass	Steel	Aluminum	Plastics	Composites	Wood
Austria – ARA ⁷	90.00	71.00	220.00	360.00	190.00	580.00	7.00
					530.00		
Belgium – FOST Plus	17.60	23.30	47.10	39.70	109.00	265.40	265.40
	231.00				265.40		
Bulgaria – EcoPack	57.26	30.68	20.96	73.63	80.27	99.19	31.70
France – Eco-Emballages	163.30	12.10	13.15	92.80	242.20	232.90	232.90
					244.70		
					280.60		
Germany – DSD	3.00	1.00	5.00	13.00	17.00	13.00	2.00

⁵ Development of Guidance on Extended Producer Responsibility (EPR): FINAL REPORT 2014. Prepared for European Commission – DG Environment by BIO Intelligence Service; in collaboration with Arcadis, Ecologic, Institute for European Environmental Policy (IEEP), Umweltbundesamt (UBA)

⁶ Participation Costs Overview 2014: Pro Europe, April 2014

⁷ The ARA fees are for 2014, the year before multiple PROs began operation.

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Table 1: PRO Fees as of January 1, 2014 ⁶ € per tonne excluding VAT							
PROs	Paper	Glass	Steel	Aluminum	Plastics	Composites	Wood
Ireland – Repak ⁸	22.73	9.18	78.51	83.62	89.16	75.78	16.00
						111.48	
Poland – Recopol	4.00	19.30	10.30	29.03	5.40	2.30	3.70
Romania – Eco-Rom	12.43	17.94	11.97	28.83	28.42	12.66	12.24
					12.66		
UK – Valpak (low and high estimates) ⁹	1.12	32.64	4.71	2.22	13.54	0.07	0.44
	1.40	42.43	11.77	5.19	23.70	0.12	0.71

Notes:

1. Where more than one fee is listed for a material, the PRO has used sub-categories with different fee rates.
2. PROs may have sources of revenue other than fees paid by members. For example, retailers in Germany contributed additional funds in 2014 to cover an operating shortfall among all PROs in order to meet financial commitments to collectors.

⁸ Repak material-specific fees are charged to brand holders. Repak also charges participation fees: €205 per tonne for manufacturers, converters and distributors and €410 per tonne for retailers.

⁹ UK costs are based on a conversion of PRN costs (paid for proof of recycling) to the quantity of packaging supplied and are estimated as PRN costs for 2014 were not known when the data source was prepared.

Appendix A Jurisdictional Scan Checklist

Topic	Element
Background	Jurisdiction
	Size
	Title of relevant legislation and/or regulation
	Responsible government department
	Designated material
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)
EPR Regulatory Requirements	Where a single PRO is required to be established <ul style="list-style-type: none"> - rationale for affording a monopoly - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power) - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition
	Where multiple PROs can form <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves
	Who is liable (individual producer or PRO)
	Scope of sectoral service requirements (residential and/or ICI)
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)
	Scope and nature of collection performance targets
	Scope and nature of recycling performance targets
	Uses acceptable for recycling performance targets
	Geographic restrictions re processing or use
	Requirements re collection and management systems that pre-dated EPR regulation
	Penalties for non-compliance
EPR Oversight	By whom
	Size of oversight body (e.g. budget, staff)
	Degree of producer compliance (i.e. free riders)
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)
	Degree of compliance with service requirements

Appendix A Jurisdictional Scan Checklist

Topic	Element
	Degree of compliance with performance requirements
	Use of penalties
Competition	Forms of competition within a regulated product category
	Forms of competition between stewardship programs or producers in the same product category
	Forms of competition in procuring and delivering collection services
	Forms of competition in procuring and delivering post-collection services
	Requirements of the jurisdiction's competition laws
	Have competition laws been applied to the delivery of services under EPR or to any PRO?
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction
Approach to Common Infrastructure	Who operates infrastructure
	Arrangements between PROs and infrastructure operators
	Arrangements among PROs
	Role of government
	Role of another party (e.g. clearinghouse)
Outcomes	Have environment public policy objectives been met
	Economic outcomes
	Perceived effectiveness within jurisdiction
	Policy gaps and/or conflicts
	Are changes being considered

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Topic	Element	Description
Background	Jurisdiction	Austria
	Size	Geographical size: 83,879 km ² Population: 8,507,786 (2014) GDP: €313.066 billion (2013) ¹⁰
	Title of relevant legislation and/or regulation	Packaging Ordinance 1992 amended in 1995, 1996, 2006, 2007 and then in 2014 to allow more than one PRO for household packaging.
	Responsible government department	Ministry of Agriculture, Forestry, Environment and Water Management
	Designated material	Packaging waste to align with the EU Packaging Directive
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	<p>Prior to January 1, 2015, three PROs operated, each with a different scope and not in competition with one another. With the entry into force of the amended legislation on January 1, 2015, PROs are able to enter the household packaging market and to directly compete with the pre-existing PRO, Alstoft Recycling Austria (ARA).</p> <p>As of January 1, 2015, three PROs are operating in competition:</p> <p>ARA is a not-for-profit organization approved to recover and recycle household packaging. Until mid-2014, a PRO called Oko-Box operated a collection system for beverage cartons, administered by ARA. This PRO has since been incorporated into ARA (in part so that the beverage cartons could be included in ARA's collection system).</p> <p>Reclay Group is a for-profit organization approved to recover and recycle household and ICI packaging.</p> <p>Landbell Austria GmbH is a for-profit organization approved to recover and recycle household and ICI packaging.</p>

¹⁰ <http://www.wikiwasteschemes.com/>

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Topic	Element	Description
EPR Regulatory Requirements	<p>Where a single PRO is required to be established</p> <ul style="list-style-type: none"> - rationale for affording a monopoly - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power) - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	<p>Austria does not require a single PRO to be established.</p>
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>PROs are subject to approval by the Minister and must carry out collection and recovery using best available environmental technology. Applications for approval must indicate the type, scope and duration of the proposed scheme, types of wastes and materials handled, operating and waste licences needed, description of operating methods and financial information. An approval can be granted for a period up to 10 years and conditions may be attached to the approval, or imposed subsequently, if this is necessary to ensure proper fulfilment of tasks. Approved systems are subject to supervision by the Ministry of Agriculture, Forestry, Environment and Water Management, which may make recommendations, demand improvements or withdraw the approval.¹¹</p> <p>Approved PROs must collect all categories of packaging, meet recovery and recycling targets, publish universal fees for all producers calculated without cross-subsidization of costs (discounts are not permitted), accept all obligated parties wishing to join and provide adequate receiving and transfer capacity in each collection area.¹²</p>

¹¹ Packaging Regulation 2014, as amended on 03.08.2016

¹² Ibid.

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Topic	Element	Description
		<p>A PRO must obtain at least a 5% market share in at least one material category by the third and in subsequent years after its establishment. If this market share is not attained, the Minister may revoke the PRO's approval at the end of the calendar quarter.¹³</p> <p>PROs may not establish their own collection facilities for household packaging. Rather, they must share use of the existing collection infrastructure owned by PROs and municipalities.¹⁴</p> <p>In cases where a competing PRO shares use of recovery facilities with the PRO operating the facilities, the operator can claim back from the competing PRO the costs associated with the shared use (in €/kg).¹⁵</p> <p>Approved PROs must devote 0.3% of their fee income to supporting prevention projects. Activities are to promote: preventing use of materials that adversely affect the quality of waste; reducing the quantity of production or packaging waste; contributing to improving the logistics of waste prevention; or information or training that contributes to waste prevention.</p> <p>Obligated businesses can register with one or more PROs, provided that each PRO has the necessary approval (for the type of packaging and for household and/or commercial packaging). If a business has registered with more than one PRO for the same category of packaging, the business must inform the PROs in advance of their respective shares using verifiable data. Changing the shares and switching between PROs is only possible at the end of each quarter.¹⁶</p>
	Who is liable (individual producer or PRO)	<p>Producers are obligated to join a PRO for household packaging.</p> <p>Companies can act individually or join a PRO to meet their obligations for ICI packaging. Companies joining a PRO can delegate their obligations to the PRO. Companies acting</p>

¹³ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

¹⁴ Ibid.

¹⁵ Ibid

¹⁶ The Future of Packaging Compliance: ARA, January 2015

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Topic	Element	Description
		individually must comply with reporting requirements and meet recovery targets. The ICI recovery and recycling targets must be met for each individual material or the company must sign up with a PRO. ¹⁷
	Scope of sectoral service requirements (residential and/or ICI)	<p>To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.</p> <p>Businesses on whose premises more than 80 tonnes of paper/board, 300 tonnes of glass, 100 tonnes of metals, or 30 tonnes of plastics becomes waste each year can register as 'large waste holders'. 'Large waste holders' are responsible for reusing or recycling the packaging waste on their premises and producers have no obligations in respect of packaging supplied to these large waste holders. For some years after the list of companies choosing this option was first published, take-up remained stable at around 20 companies, though some companies had de-registered while new ones had been added. By 2008, the number of companies registered fell to 13. Companies registered as large waste-holders are predominantly in the automotive and electronics sectors, but some grocery-related businesses have also registered.¹⁸</p>
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	The Packaging Ordinance requires a nation-wide collection and recycling system including collection points with sufficient capacity throughout the federal territory at a reasonable distance from the place where waste arises. The distance to collection points must not be greater than the mean regional distance to the service facilities for goods of the kind in which the packaging are sold. At least one collection point must be set up and operated in each community but, in the case of individual packaging materials that arise in small quantities, one collection for each district is sufficient. ¹⁹

¹⁷ Ibid.

¹⁸ Packaging Legislation in Europe: Austria: Perchards, November 2009

¹⁹ Ibid.

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Topic	Element	Description				
	Scope and nature of collection performance targets	2014 Targets²⁰	Household Packaging		ICI Packaging	
			Collection	Recycling Efficiency	Collection	Recycling Efficiency
		Paper, board, corrugated board	80%	95%	90%	95%
		Glass	80%	100%	90%	100%
		Metals	50%	100%	60%	100%
		Plastics	60%	50%	85%	75%
		Beverage composite board	50%	60%		
		Other composite materials	40%	40%	40%	40%
		Wood			25%	60%
	Scope and nature of recycling performance targets	Austria has the following categories of targets: 1) material-specific targets for businesses individually complying with the recovery objectives, expressed as percentages of packaging taken back and their own packaging waste; 2) targets for reuse and recovery (material and energy) for beverage containers; and, 3) targets for economic operators (manufacturers, importers, fillers and distributors) which take part in a collection and recycling scheme as set out in the following table. ²¹				
		Material	Overall Recovery Targets 2006	Recycling Targets 2014	Recovery Targets 2014	
		Paper, board, corrugated board	60%	75%	80%	
		Glass	60%	80%	80%	
		Ceramics	60%			

²⁰ Packaging Regulation 2014, as amended on 03.08.2016

²¹ European Commission - European Packaging Waste Management Systems Main Report, February 2001

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Topic	Element	Description			
		Material	Overall Recovery Targets 2006	Recycling Targets 2014	Recovery Targets 2014
		Metals	60%	65%	65%
		Plastics	60%	30%	95%
		Wood	60%	15%	15%
		Beverage composite board	60%	25%	40%
		Other composite materials	60%	15%	95%
		Total	60%	55%	
	Uses acceptable for recycling performance targets	<p>Only plastics that are recycled back into plastics may be included in the calculation of recycling.</p> <p>The EU has end-of-waste regulations for iron, steel and aluminum scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities.²²</p>			
	Geographic restrictions re processing or use	Packaging waste exported from the European Union may be included in the calculation of recycling if it can be proven that the recycling took place under conditions that are substantially equivalent to those in the relevant European Union legislation and the export is in accordance with European law regarding waste shipments.			
	Requirements re collection and management systems that pre-dated	None.			

²² http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

Appendix B Austria Jurisdictional Scan

Topic	Element	Description
	EPR regulation	Glass was collected before the transposition of the Packaging Directive as a nationwide collection system had been in existence since the 1970s.
	Penalties for non-compliance	A producer who fails to meet his obligation is subject to fines and reimbursement of the Ministry's enforcement costs. A producer convicted a second time must pay a fine equivalent to double the amount of the fees they would have paid had they been members of a PRO.
EPR Oversight	By whom	The Ministry of Agriculture, Forestry, Environment and Water Management is responsible for oversight of the PROs and, as of January 1, 2015, a new Packaging Coordination Board, established under the Ministry, is responsible for monitoring the obligated businesses. The Packaging Coordination Board is responsible for confirming the accuracy of the data submitted by obligated businesses. These checks aim to eliminate competitive disadvantages for businesses that provide accurate data and minimise freeriding. ²³
	Size of oversight body (e.g. budget, staff)	No information is available on the scope of the Ministry's activities. The Packaging Coordination Board is relatively new and has not yet published information on its activities.
	Degree of producer compliance (i.e. free riders)	<p>To reduce free riders, businesses that are not members of a PRO or that cannot show that they have collected and recycled the required quantity of packaging must:</p> <ul style="list-style-type: none"> • sign up with a PRO for the difference between their return rate and 90% of the packaging they have placed on the market if they have achieved a return rate of 50% or more; • sign up for the difference between their actual return rate and 100% of what they place on the market if they have achieved a return rate of less than 50%.²⁴ <p>This is intended to avoid situations where an individual company recycles a portion of its packaging waste and the remaining ends up in PRO collections without a licence fee having been paid.</p>
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	In 2014, ARA conducted 529 audits of obligated producers: 67% of the audits did not identify errors or the errors represented deviations of less than 1%; 11% of the audits identified significant deviations. ²⁵

²³ The Future of Packaging Compliance: ARA, January 2015

²⁴ European Commission - European Packaging Waste Management Systems Main Report, February 2001

²⁵ Performance Report 2014: Alstoff Recycling Austria (ARA)

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Topic	Element	Description
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	None identified.
	Degree of compliance with service requirements	In 2014, ARA met or exceeded the collection service rates specified by the Environment Ministry for all packaging materials.
	Degree of compliance with performance requirements	In 2014, ARA met or exceeded the recycling and recovery rates specified by the Environment Ministry for all packaging materials.
	Use of penalties	Several companies have been prosecuted for failing to license their packaging with a PRO. Fines have ranged between €363 and €730 and offenders also have to pay the Ministry's enforcement costs, typically €1450 to €2200. Companies prosecuted a second time must pay a fine equivalent to double the licence fees they would have paid if they were members of a PRO. Most companies have been prosecuted for more than one offence and have typically paid fines and costs of €7,270. Some companies have successfully challenged take-back requirements and the Ordinance has been subsequently amended. ²⁶
Competition	Forms of competition within a regulated product category	In July 2013, the European Commission informed ARA via a statement of objections of its preliminary view that ARA was abusing its dominant position in the market for the management of household and commercial packaging waste and may thereby have prevented competitors from entering or expanding in these markets. An amendment to the Austrian Waste Management Act and a new Packaging Ordinance with new and clear boundary conditions for competition in the household sector came into force on January 1, 2015.

²⁶ Packaging Legislation in Europe: Austria: Perchards, November 2009

Appendix B Austria Jurisdictional Scan

Topic	Element	Description
	Forms of competition between stewardship programs or producers in the same product category	<p>In 2014, prior to the introduction of competing schemes, ARA had 16,341 members, collected 844,948 tonnes of packaging and recycled 805,142 tonnes of packaging.²⁷</p> <p>During 2104, in preparation for the new legislative environment as of January 1, 2015, ARA: amended its Compliance and License Agreement for all license partners; established new contracts with municipalities and collection partners; developed a shared-use agreement for infrastructure; adjusted its rate structure; provided information seminars and webinars to customers and partners; submitted a new application for authorisation to operate a collection and recovery scheme; and, established a data management system that is available to other collection and recovery schemes.²⁸</p>
	Forms of competition in procuring and delivering collection services	Municipalities use tenders to award contracts.
	Forms of competition in procuring and delivering post-collection services	ARA holds regular public tenders for collection, sorting and recycling that can be won by municipalities (and their contracted waste management companies) or by private waste management companies.
	Requirements of the jurisdiction's competition laws	<p>The Austrian Competition Commission under the direction of its Director General is responsible for the administration of the Austrian Federal Law Against Cartels and other Restraints of Competition.</p> <p>This law sets out provisions to deal with mergers, cartels, abuse of market power and other restraints of competition.</p>
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	In 2013 the European Commission sent ARA a statement of objections for suspected abuse of dominance on the markets for the management of packaging waste by hindering competitors to enter or expand on these markets. ²⁹

²⁷ Performance Report 2014: Alstoft Recycling Austria (ARA)

²⁸ Ibid.

²⁹ Antitrust: Commission sends statement of objections to ARA for suspected abuse of dominance on Austrian waste management markets. Retrieved from http://europa.eu/rapid/press-release_IP-13-711_en.htm

Appendix B Austria Jurisdictional Scan

Topic	Element	Description
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	Reclay Group, one of the PROs that began operation as of January 1, 2015, also operates PROs in Germany, Slovakia, the Czech Republic and Hungary.
Approach to Common Infrastructure	Who operates infrastructure	<p>Municipalities are responsible for household waste collection except packaging waste. In the case of paper packaging, the municipal collection infrastructure has been co-used by ARA at an agreed payment rate.</p> <p>Under the revised Packaging Ordinance, new PROs may <u>not</u> establish any additional collection infrastructure for household packaging. Rather, they must share use of the existing collection infrastructure owned by PROs and municipalities.³⁰</p> <p>Each PRO is responsible for the sorting and recycling or recovery of a share of the packaging collected in each category (paper, glass, metal and light-weight packaging) that corresponds to its monthly market share. The packaging waste has to be picked up from designated regional transfer points. The same procedure applies to commercial packaging. This approach remains in place until 2017 when current contracts expire. For post 2018, tendering will be organised to establish new five year-contracts. Each PRO will be responsible for issuing tenders for specific territories based on its market share. All PROs are bound to co-use the infrastructure resulting from these tenders.³¹</p>
	Arrangements between PROs and infrastructure operators	Pros can share use at the system level (Article 30 WMA) by establishing an agreement with an existing PRO for the nationwide shared use of the collection infrastructure for a particular packaging material. Alternatively, PROs can share use at the municipal level (Article 29 C WMA) by establishing agreements with all municipalities and all collection partners across the country for shared use of the collection infrastructure for all types of household packaging. ³²

³⁰ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

³¹ Ibid.

³² Performance Report 2014: Alstoff Recycling Austria (ARA)

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Topic	Element	Description
		<p>PROs approved to manage packaging waste from households require permits to site containers (for example, for glass) in public areas. They may contract with municipalities to empty the containers and clean the areas in which the containers are sited.</p> <p>Packaging made of plastic and composite materials is collected directly from households (in yellow bags or bins) together with packaging made of wood, textiles, ceramics and biodegradable materials in 60% of Austria. The remaining areas of Austria (Vienna, Lower Austria, Salzburg, and Carinthia) collect only recyclable lightweight packaging. In these regions, other light-weight packaging can be disposed of through the general waste collection service, where it is used for energy recovery with the costs covered by PROs.</p> <p>Packaging made of biodegradable material is collected with light-weight packaging to avoid contamination of organic waste due to resident confusion about what is and is not biodegradable packaging.</p> <p>Packaging waste remaining in the residual waste has not posed significant difficulties for glass and metal (materials that have high market value) but has been a serious problem for lightweight packaging. The amended Packaging Ordinance contains provisions for municipalities to also receive compensations for packaging found in mixed waste. The calculation of these compensations will be performed every three years and will take into account the volume of packaging waste collected together with the residual waste, the proportion of packaging waste that is separately collected and the total amount of packaging put on the market.³³</p> <p>As part of restructuring to prepare for the new regulatory context as of January 1, 2015, ARA purchased 51% of Austria Glass Recycling GmbH, a not-for-profit organization providing collection and processing of glass. ARA also owns Advanced Recycling Solutions GmbH to</p>

³³ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

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Topic	Element	Description
		<p>provide waste management services for business and industry and Network Management and IT Service GmbH to provide consulting and data management services to producers.³⁴</p> <p>Prior to the changes implemented on January 1, 2015, ARA had agreements with all Austrian municipalities, more than 200 waste management companies and recovery and recycling firms to ensure that collection, sorting and recovery and recycling is carried out on a nationwide basis, in urban and rural districts and for different branches of industry.³⁵</p> <p>Until mid-2014, a PRO called Oko-Box operated a collection system for beverage cartons, administered by ARA. This PRO has since been incorporated into ARA (in part so that the beverage cartons could be included in the ARA collection system).³⁶</p>
	Arrangements among PROs	<p>PROs may not establish their own collection facilities for household packaging. Rather, they must share use of the existing collection infrastructure.³⁷</p> <p>In cases where a competing PRO shares use of recovery facilities with the PRO operating the facilities, the operator can claim back from the competing PRO the costs associated with shared use (in €/kg).³⁸</p>
	Role of government	None
	Role of another party (e.g. clearinghouse)	None
Outcomes	Have environment public policy objectives been met	1.539 M households received collection of light-weight packaging (yellow bin system). A total of 1.649 M collection bins for papers, glass and metals are used across the 9 collection regions.

³⁴ Performance Report 2014: Alstoft Recycling Austria (ARA)

³⁵ Ibid

³⁶ Ibid.

³⁷ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

³⁸ Packaging Legislation in Europe: Austria: Perchards, November 2009

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Topic	Element	Description																																																												
		In 2011, 85% of packaging was collected with 65.8% managed by recycling and the remaining 19.2% incinerated for heat or energy recovery. ³⁹																																																												
		<table><tr><th>Material</th><th>Overall Recovery Targets 2006</th><th>Overall Recycling Targets 2014</th><th>Recovery Achieved in 1997</th><th>Recycling Achieved in 1997</th><th>Recycling Achieved in 2011</th></tr><tr><td>Paper, board, corrugated board</td><td>60%</td><td>60%</td><td>75.1%</td><td>75.1%</td><td>82.5%</td></tr><tr><td>Glass</td><td>60%</td><td>60%</td><td>76.5%</td><td>76.5%</td><td>87.8%</td></tr><tr><td>Ceramics</td><td>60%</td><td></td><td></td><td></td><td></td></tr><tr><td>Metals</td><td>60%</td><td>50%</td><td>34.1%</td><td>34.1%</td><td>62.1%</td></tr><tr><td>Plastics</td><td>60%</td><td>22.5%</td><td>45.6%</td><td>20.0%</td><td>34.8%</td></tr><tr><td>Wood</td><td>60%</td><td>15%</td><td></td><td></td><td>31.1%</td></tr><tr><td>Beverage composite board</td><td>60%</td><td>25%</td><td></td><td></td><td></td></tr><tr><td>Other composite materials</td><td>60%</td><td>15%</td><td></td><td></td><td></td></tr><tr><td>Total</td><td>60%</td><td>55%</td><td></td><td></td><td>65.8%</td></tr></table>	Material	Overall Recovery Targets 2006	Overall Recycling Targets 2014	Recovery Achieved in 1997	Recycling Achieved in 1997	Recycling Achieved in 2011	Paper, board, corrugated board	60%	60%	75.1%	75.1%	82.5%	Glass	60%	60%	76.5%	76.5%	87.8%	Ceramics	60%					Metals	60%	50%	34.1%	34.1%	62.1%	Plastics	60%	22.5%	45.6%	20.0%	34.8%	Wood	60%	15%			31.1%	Beverage composite board	60%	25%				Other composite materials	60%	15%				Total	60%	55%			65.8%
		Material	Overall Recovery Targets 2006	Overall Recycling Targets 2014	Recovery Achieved in 1997	Recycling Achieved in 1997	Recycling Achieved in 2011																																																							
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		Total	60%	55%			65.8%																																																							
	Economic outcomes	Between 1995 and 2014, ARA increased collection of packaging by 35% (from 623,600 tonnes to 844,948 tonnes) and decreased costs by about 60% (from €310/tonne to €123/tonne). ⁴⁰ ARA reports that packaging waste from households and small businesses accounted for 62% (524,700 tonnes) of the tonnes managed in 2014 while packaging waste from commercial and industrial sources accounted for around 38% (320,200 tonnes). The percentage from commercial and industrial sources is above 50% if the packaging from small businesses, which is																																																												

³⁹ Performance Report 2014: Alstoff Recycling Austria (ARA)

⁴⁰ Ibid.

Appendix B Austria Jurisdictional Scan

Topic	Element	Description																										
		<p>typically collected through the household collection system, is included. ARA reports that the per-capita amount of packaging and waste paper collected was 116.5 kg in 2014, slightly below the 2013 amount of 117.4 kg.⁴¹</p> <p>ARA reports that more than 90% of the packaging it collected in 2014 was recycled in Austria.⁴²</p> <p>In 2014 (prior to the introduction of multiple PROs on January 1, 2015), ARA charged its members the following fee rates:⁴³</p> <table><tr><th colspan="7">PRO Fees as of January 1, 2014 € per tonne excluding VAT</th></tr><tr><th>Paper</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics⁴⁴</th><th>Composites</th><th>Wood</th></tr><tr><td>90.00</td><td>71.00</td><td>220.00</td><td>360.00</td><td>190.00</td><td rowspan="2">580.00</td><td rowspan="2">7.00</td></tr><tr><td></td><td></td><td></td><td></td><td>530.00</td></tr></table> <p>As of January 1, 2015, PROs are obligated to treat all of their customers equally by charging the same fees per category to all customers. Tariff rates and a customer list must be published online and must be updated on a monthly basis to provide transparency.⁴⁵</p> <p>ARA’s 2014 Annual report predicts higher costs as a result of the changes to the Packaging Ordinance that took effect on January 1, 2015.⁴⁶ No data are available for the year 2015 during which additional PROs began operating in competition with ARA.</p>	PRO Fees as of January 1, 2014 € per tonne excluding VAT							Paper	Glass	Steel	Aluminum	Plastics ⁴⁴	Composites	Wood	90.00	71.00	220.00	360.00	190.00	580.00	7.00					530.00
PRO Fees as of January 1, 2014 € per tonne excluding VAT																												
Paper	Glass	Steel	Aluminum	Plastics ⁴⁴	Composites	Wood																						
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				530.00																								

⁴¹ Performance Report 2014: Alstoft Recycling Austria (ARA)

⁴² Ibid.

⁴³ Participation Costs Overview 2014: Pro Europe, April 2014

⁴⁴ Where more than one fee is listed for a material, the PRO has used sub-categories with different fee rates.

⁴⁵ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁴⁶ Performance Report 2014: Alstoft Recycling Austria (ARA)

Appendix B Austria Jurisdictional Scan

Topic	Element	Description
	Perceived effectiveness within jurisdiction	Austria appeared satisfied with ARA's performance. The European Commission (not the Austrian Competition Commission) informed ARA, in June 2013, of its preliminary view that ARA may have abused its dominant position on the markets for the management of packaging waste (mainly packaging made of plastic and metal) by hindering competitors to enter or expand on these markets.
	Policy gaps and/or conflicts	As the amended Packaging Ordinance came into force on January 1, 2015, policy gaps and/or conflicts in the amended Ordinance have not yet been identified.
	Are changes being considered	Austria allowed additional PROs as of January 1, 2015. Data to assess the effects of this change are not yet available.

Appendix C Belgium Jurisdictional Scan

Topic	Element	Description
Background	Jurisdiction	Belgium
	Size	Geographical size: 30,528 km ² Population: 11,203,992 (2014) GDP: €382.692 billion (2013) ⁴⁷
	Title of relevant legislation and/or regulation	Inter-regional Cooperation Agreement May 30, 1996 (came into effect on March 5, 1997) most recently amended on November 4, 2008
	Responsible government department	Federal Ministry for Social Affairs, Health and Environment The regions are responsible for waste management and obligated parties must register and submit data to one of three regional authorities: - Brussels: Institute for Environmental Management (I.B.G.E.) - Flanders: Flemish Ministry for Infrastructure and Environment - Wallonia: Walloon Ministry for Natural Resources and Environment
	Designated material	Packaging waste to align with the EU Packaging Directive
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	FOST Plus for household packaging. FOST Plus was established in 1994 as a co-operative and became a not-for-profit organization in 1996. Producers are represented on its Board of Directors. In 1998, the FOST Plus system was acknowledged by the government of Belgium by the signing of a Cooperation Agreement. ⁴⁸ Val-I-PAC for ICI packaging. Val-I-PAC was established in 1997, began operations in 1998 and was acknowledged by the government of Belgium by the signing of a Cooperation Agreement in 1999. ⁴⁹
Regulatory Require	Where a single PRO is required to be established - rationale for affording a monopoly	Belgium does not require a single PRO to be established.

⁴⁷ <http://www.wikiwasteschemes.com/>

⁴⁸ European Commission - European Packaging Waste Management Systems Main Report, February 2001

⁴⁹ Ibid.

Appendix C Belgium Jurisdictional Scan

Topic	Element	Description
	<ul style="list-style-type: none"> - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power) - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>The legislation does not state that there can be only one PRO, but sets clear rules and stringent obligations for such organisations.⁵⁰</p> <p>The Cooperation Agreement requires that accredited PROs be not-for-profit, have only one statutory object (the recovery obligation of its members), have shareholders that meet certain tests (no contravention of environmental regulations), meet recovery targets, charge fees in a non-discriminatory way.⁵¹</p> <p>The Cooperation Agreement requires that FOST Plus and Val-I-PAC each have a three-year agreement with the government to manage household and ICI packaging, respectively. The licensing acts of FOST Plus and Val-I-PAC define the characteristics that distinguish household packaging from ICI packaging so that producers can determine how to report the quantity of packaging supplied to households to FOST Plus and the quantity of ICI packaging supplied to ICI to Val-I-PAC.⁵²</p>

⁵⁰ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁵¹ European Commission - European Packaging Waste Management Systems Main Report, February 2001

⁵² Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

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Topic	Element	Description
		<p>The Cooperation Agreement requires that FOST Plus and Val-I-PAC act only within their defined scope of activities (collection and recycling of packaging waste). These organizations may not finance any activities related to prevention or undertake any communication campaign except for promoting easy-to-recycle packaging or the use of recycled material in the production of packaging.⁵³</p> <p>FOST Plus includes a public service mission including equal service for all residents, both urban and rural.</p>
	Who is liable (individual producer or PRO)	The Co-operation Agreement defines types of packers/fillers and importers responsible for packaging. The responsible party is obliged to submit, once every three years, a prevention plan to the authorities in charge of the Co-operation Agreement. This can be done individually or through an accredited organization. ⁵⁴
	Scope of sectoral service requirements (residential and/or ICI)	To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	The PRO responsible for household packaging must provide collection service in a homogeneous way across Belgium. ⁵⁵ FOST Plus was required to provide nation-wide collection service by 2001. ⁵⁶ FOST Plus chose to meet this obligation progressively by working with municipalities and inter-municipal authorities sequentially to establish mutually acceptable terms for tendering for collection and processing services and an agreement on the portion of the tender cost to be reimbursed by FOST Plus. The terms of the agreement between FOST Plus and each municipality or inter-municipal authority vary.
	Scope and nature of collection performance targets	No collection targets

⁵³ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁵⁴ Ibid.

⁵⁵ European Commission - European Packaging Waste Management Systems Main Report, February 2001

⁵⁶ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

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Topic	Element	Description		
	Scope and nature of recycling performance targets	Material	Household Packaging (FOST Plus) ⁵⁷	ICI Packaging (Val-I-PAC) ⁵⁸
		Paper – cardboard	60%	60%
		Plastic	30%	30%
		Metal	50%	50%
		Glass	60%	
		Wood		15%
		Total Recovery Target	90%	85%
		Total Recycling Target	80%	80%
	Uses acceptable for recycling performance targets	Recovery and recycling operations must be carried out in a way that achieves the level of environmental protection set out in the EU Waste Framework Directive. The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities. ⁵⁹		
	Geographic restrictions re processing or use	None. FOST Plus reports that 73% of the packaging it collected was processed in Belgium, 22% in neighbouring countries (Netherlands, Germany and France), just under 5% in other European		

⁵⁷ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁵⁸ European Commission - European Packaging Waste Management Systems Main Report, February 2001

⁵⁹ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

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Topic	Element	Description
		countries and 0.4% outside of Europe. FOST Plus reports that this approach reduced transportation costs and facilitated inspection of the processing facilities. ⁶⁰
	Requirements re collection and management systems that pre-dated EPR regulation	None
	Penalties for non-compliance	Administrative fines: €1000 per ton not recycled and €500 per ton not recovered Criminal sanctions: 1 month to 1 year of imprisonment and/or a fine of €6,000 to €12 M ⁶¹
EPR Oversight	By whom	Interregional Packaging Commission (IPC), a public institution founded jointly by the three regions (Brussels, Flanders, Walloon) in order to ensure harmonized oversight of the management of packaging waste in Belgium. ⁶² The IPC is responsible for defending the public interest, ensuring data accuracy, creating a level playing field for producers and safeguarding the collection and processing marketplace. ⁶³
	Size of oversight body (e.g. budget, staff)	The IPC Board consists of nine members, three from each of the regions and is supported by a permanent secretariat comprised of officials from each regional government with a manager appointed by the Board to oversee the permanent secretariat. The IPC operates with a budget of just under €1 M excluding personnel costs for 21 staff or about 19 FTE. These staff are responsible for the core business of packaging waste oversight as well as additional responsibilities such as waste transit. ⁶⁴
	Degree of producer compliance (i.e. free riders)	The IPC reports that less than 10% of both the household and ICI packaging available for collection is not being reported by producers. For household waste, the IPC believes this is due primarily to e-commerce and imports by civilians rather than non-compliance by obligated producers in Belgium. ⁶⁵

⁶⁰ FOST Plus 2014 Annual Report

⁶¹ A Look at Oversight/Regulation Models for Effective Oversight of EPR Compliance Schemes: Belgium: Marc Adams, Director Interregional Packaging Commission, November 2014

⁶² Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁶³ A Look at Oversight/Regulation Models for Effective Oversight of EPR Compliance Schemes: Belgium: Marc Adams, Director Interregional Packaging Commission, November 2014

⁶⁴ Personal communication: Marc Adams, Director Interregional Packaging Commission

⁶⁵ Personal communication: Marc Adams, Director Interregional Packaging Commission

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Topic	Element	Description
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	<p>In 1999, the Interregional Packaging Commission initiated a series of inspections of producers as well as the PROs to assess the declarations of the quantity of packaging placed on the market and the effectively recycled quantities. Around 25% of the producers had not properly fulfilled their take-back obligation. They were given time limit to come into compliance.⁶⁶</p> <p>The IPC reports that FOST Plus and Val-I-PAC have effective systems to monitor data reporting accuracy and the IPC provides a limited double check. Data inaccuracies identified are considered to be genuine errors as the proportion of companies declaring too little and those declaring too much is roughly the same.⁶⁷</p>
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	The IPC reports no problems in reporting by PROs.
	Degree of compliance with service requirements	FOST Plus has met its requirement to provide nation-wide collection service.
	Degree of compliance with performance requirements	The IPC has taken no compliance action against FOST Plus or Val-I-PAC.
	Use of penalties	The IPC reports it applies administrative fines, although it notes that this process is time consuming which limits its use. The IPC commonly organizes its monitoring activities by sector and may impose no fines or as many as ten to twenty fines on members of the sector, depending on the type of complexities within the sector. ⁶⁸
Competition	Forms of competition within a regulated product category	IPC takes the position that a monopoly at the PRO level isn't harmful as long as the PROs are not-for-profit, all risk of monopoly abuse is avoided and competition is incorporated into delivery of services. IPC requires that PROs not be controlled by waste collectors or processors and that the fees charged to producers be transparent and non-discriminatory (same fees for all members, notwithstanding their size). ⁶⁹

⁶⁶ European Commission - European Packaging Waste Management Systems Main Report, February 2001

⁶⁷ Personal communication: Marc Adams, Director Interregional Packaging Commission

⁶⁸ Ibid.

⁶⁹ A Look at Oversight/Regulation Models for Effective Oversight of EPR Compliance Schemes: Belgium: Marc Adams, Director Interregional Packaging Commission, November 2014

Appendix C Belgium Jurisdictional Scan

Topic	Element	Description
	Forms of competition between stewardship programs or producers in the same product category	FOST Plus is responsible for household packaging and Val-I-PAC is responsible for ICI packaging. There is no competition between these PROs.
	Forms of competition in procuring and delivering collection services	FOST Plus works with municipalities and inter-municipal authorities in the development of tenders for collection services.
	Forms of competition in procuring and delivering post-collection services	FOST Plus works with municipalities and inter-municipal authorities in the development of tenders for processing services. Val-I-PAC offers financial incentives to processors to stimulate the collection and recycling of ICI packaging and enters into contracts with existing companies to compile evidence of the collection, recycling and recovery of industrial packaging waste. ⁷⁰
	Requirements of the jurisdiction's competition laws	On 6 September 2013, the new Belgian Competition Act came into force. Under the new Belgian Competition Act, employees can be held liable individually for engaging with competitors and negotiating or agreeing to fix prices, to limit production or output, or to allocate markets between them. ⁷¹
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	No.
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	FOST Plus exports glass since the collapse of the Verlipack group, which was the only Belgium group to use container glass from households. FOST Plus reports that markets exist in Belgium for HDPE and mixed plastics but not for PET. ⁷²

⁷⁰ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁷¹ http://www.freshfields.com/en/knowledge/New_Belgian_Competition_Act_enters_into_force/

⁷² FOST Plus 2014 Annual Report

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Topic	Element	Description
Approach to Common Infrastructure	Who operates infrastructure	Municipalities and inter-municipal authorities are responsible for the collection of packaging. These municipalities and inter-municipal authorities may contract with companies to provide collection of household packaging in their operational areas through curbside collection and depots. ⁷³
	Arrangements between PROs and infrastructure operators	<p>Collection of household packaging is financed, co-ordinated and monitored by FOST Plus.</p> <p>According to the Co-operation Agreement, FOST Plus is required to enter into an agreement with any public legal entity with territorial responsibility for household waste products. Municipalities in Belgium are numerous (about 600) and small, but have grouped together into larger inter-municipal entities so that only around 40 contracts have to be negotiated with FOST-Plus. FOST Plus has defined collection scenarios it considers optimum. Contracts with municipalities adopting these scenarios are called FOST Plus projects while municipalities that have not adopted these scenarios are described as 'existing systems'. Financing provided by FOST Plus differs for FOST Plus projects and existing systems. The basis for payment (per household, per tonne, per collection point, taking into account transportation distances, etc.) can also vary by contract.⁷⁴</p> <p>In practice, municipalities that want a partnership with FOST Plus invite FOST Plus to be present at all the steps of their tender procedure in order to come to an agreement on the financing of collection. Where municipalities deliver collection directly, the payment rate is negotiated with FOST-Plus.⁷⁵</p> <p>FOST Plus assumes that 25% of total papers collected are paper packaging. Some municipalities have implemented collection of types of packaging beyond those required in their arrangements with FOST Plus, for example collection of additional categories of plastic packaging</p>

⁷³ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁷⁴ Ibid.

⁷⁵ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

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		<p>from households through depots or supplementary curbside collection. FOST Plus provides some financial compensation for this additional collection.</p> <p>FOST-Plus utilizes tenders to select companies to process the collected household packaging.⁷⁶</p> <p>Val-I-PAC offers financial incentives to processors to stimulate the collection and recycling of ICI packaging and enters into contracts with existing companies to compile evidence of the collection, recycling and recovery of industrial packaging waste.⁷⁷</p>				
	Arrangements among PROs	FOST-Plus and Val-I-PAC work together to create a common registration program for members (Packbase). This common system allows companies to declare all their packaging in one single system which automatically calculates respective contributions for household to FOST-Plus and ICI packaging to Val-I-PAC. ⁷⁸				
	Role of government	The Inter-Regional Packaging Commission's accreditation of FOST-Plus includes rules on how FOST-Plus will finance collection and sorting. ⁷⁹				
	Role of another party (e.g. clearinghouse)	None				
Outcomes	Have environment public policy objectives been met	Material	Recycling Target for Household Packaging	Collected as % of Supplied by FOST Plus Members (2014)⁸⁰	Collected as % of Total Estimated Supplied to Market (2014)⁸¹	
		Paper – cardboard	60%	99.6%	87.2%	
		Paper - beverage cartons		91.0%	89.3%	
		Glass	60%	109.5%	103.2%	

⁷⁶ Ibid.

⁷⁷ Ibid.

⁷⁸ European Commission - European Packaging Waste Management Systems Main Report, February 2001

⁷⁹ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁸⁰ FOST Plus 2014 Annual Report

⁸¹ Ibid.

Appendix C Belgium Jurisdictional Scan

		<table><tr><th>Material</th><th>Recycling Target for Household Packaging</th><th>Collected as % of Supplied by FOST Plus Members (2014)⁸²</th><th>Collected as % of Total Estimated Supplied to Market (2014)⁸³</th></tr><tr><td>Plastic – bottles and flasks</td><td>30%</td><td>75.0%</td><td>72.8%</td></tr><tr><td>Metals</td><td>50%</td><td>102.5%</td><td>97.9%</td></tr><tr><td>Other</td><td></td><td>0.8%</td><td>0.7%</td></tr><tr><td>Total recycling</td><td>80%</td><td>86.8%</td><td>80.2%</td></tr><tr><td>Total recovery</td><td></td><td>89.7%</td><td></td></tr></table>	Material	Recycling Target for Household Packaging	Collected as % of Supplied by FOST Plus Members (2014) ⁸²	Collected as % of Total Estimated Supplied to Market (2014) ⁸³	Plastic – bottles and flasks	30%	75.0%	72.8%	Metals	50%	102.5%	97.9%	Other		0.8%	0.7%	Total recycling	80%	86.8%	80.2%	Total recovery		89.7%	
Material	Recycling Target for Household Packaging	Collected as % of Supplied by FOST Plus Members (2014) ⁸²	Collected as % of Total Estimated Supplied to Market (2014) ⁸³																							
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		<p>FOST Plus reports 25% of total papers collected assuming that this is the proportion of paper packaging to total papers. FOST Plus also includes in its report an estimate of materials collected in parallel collection systems (representing 0.84% of collected tonnes).⁸⁴</p> <p>FOST Plus selects the types of packaging to be collected based on the availability of sorting technologies and recycling markets, as reflected in the small amount of residue.</p>																								
	Economic outcomes	<p>Collection and management of packaging represents 80% of FOST Plus annual expenses with the remaining 20% spent on communications and overhead. Since 2012, FOST Plus expenses are covered by approximately even contributions from commodity revenues and producer fees (€61.2 M in 2014 from 5,054 members). Prior to 2012, producer fees exceeded commodity revenue by €20 M to €30 M per year. FOST Plus attributes the increasing relative contribution from commodity revenue and declining relative contribution from producer fees to the high demand for recycling feedstock and the high quality of the material offered by FOST Plus to recycling markets. Total gross costs are €191/tonne with €92 per tonne commodity revenue. The average fee paid by producers is €0.08 per km or €6 per capita per year.⁸⁵</p>																								

⁸² FOST Plus 2014 Annual Report

⁸³ Ibid.

⁸⁴ Ibid.

⁸⁵ FOST Plus 2014 Annual Report

Appendix C Belgium Jurisdictional Scan

	<p>In 2014, FOST Plus charged its members the following fee rates:⁸⁶</p> <table><tr><th colspan="7">PRO Fees as of January 1, 2014 € per tonne excluding VAT</th></tr><tr><th>Paper⁸⁷</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics⁸⁸</th><th>Composites</th><th>Wood</th></tr><tr><td>17.60</td><td rowspan="2">23.30</td><td rowspan="2">47.10</td><td rowspan="2">39.70</td><td>109.00</td><td rowspan="2">265.40</td><td rowspan="2">265.40</td></tr><tr><td>231.00</td><td>265.40</td></tr></table> <p>The FOST Plus system reportedly results in 2,361 direct and 205 indirect jobs, with 74% of these jobs open to low-skilled workers.⁸⁹</p> <p>The Green Dot logo was not approved by the Interregional Packaging Commission in Belgium which considered that the logo could be confusing because it could not be used by the citizens to help them to sort their packaging waste. FOST Plus and its members utilize the Green Dot.</p>	PRO Fees as of January 1, 2014 € per tonne excluding VAT							Paper ⁸⁷	Glass	Steel	Aluminum	Plastics ⁸⁸	Composites	Wood	17.60	23.30	47.10	39.70	109.00	265.40	265.40	231.00	265.40
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Paper ⁸⁷	Glass	Steel	Aluminum	Plastics ⁸⁸	Composites	Wood																		
17.60	23.30	47.10	39.70	109.00	265.40	265.40																		
231.00				265.40																				
Perceived effectiveness within jurisdiction	<p>A number of inter-municipal authorities have appealed various Inter-Regional Packaging Commission’s decisions, for example:</p> <ul style="list-style-type: none">• That FOST Plus is not required to reimburse municipalities for the collection, sorting and recovery costs for residue if it exceeds 20%.⁹⁰• Reducing the portion of the paper stream that is considered to be paper packaging and for which FOST Plus is then responsible from 50% to 25%.⁹¹																							
Policy gaps and/or conflicts	<p>Some have argued that VAL-I-PAC’s use of incentives to processors does not comply with the principle defined in the Interregional Co-operation Agreement which requires “the full transfer of the costs of the management of packaging waste to those responsible for packaging”.⁹²</p>																							

⁸⁶ Participation Costs Overview 2014: Pro Europe, April 2014

⁸⁷ Where more than one fee is listed for a material, the PRO has used sub-categories with different fee rates.

⁸⁸ Ibid.

⁸⁹ Participation Costs Overview 2014: Pro Europe, April 2014

⁹⁰ Competition among Producer Responsibility Organisations and role of municipalities in an EPR system: Case study of EPR for household packaging in Belgium, Germany and Austria: Bilyana Spasova, September 2014 (Supervisor, Thomas Lindhqvist, Thesis for the fulfilment of the Master of Science in Environmental Management and Policy, Lund, Sweden)

⁹¹ European Commission - European Packaging Waste Management Systems Main Report, February 2001

⁹² Ibid.

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	Are changes being considered	<p>The IPC reports that the minimum recovery and recycling targets per material will be increased if the revisions to the European Packaging Directive, currently under discussion, are implemented. Discussions within Belgium have included the introduction of a deposit for one-way beverage packaging and limitation of the use of lightweight plastic carrier bags. Wallonia has already prohibited use of these bags.⁹³</p> <p>The conditions imposed on FOST Plus and Val-I-PAC are reviewed every 5 years as part of their accreditation renewal process. When the FOST Plus accreditation was last renewed (2014-2018), the IPC required that FOST Plus implement projects to test the collection of all plastics.⁹⁴</p>
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⁹³ Personal communication: Marc Adams, Director Interregional Packaging Commission

⁹⁴ Ibid.

Appendix D Bulgaria Jurisdictional Scan

Topic	Element	Description
Background	Jurisdiction	Bulgaria ⁹⁵
	Size	Geographical size: 111,002 km ² Population: 7,245,677 (2014) GDP: €39.94 billion (2013) ⁹⁶
	Title of relevant legislation and/or regulation	Waste Management Act (WMA) Ordinance on Packaging and Packaging Waste, 2004 (amended in 2012)
	Responsible government department	Ministry of Environment and Water
	Designated material	Packaging waste to align with the EU Packaging Directive
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	<p>There are currently four licensed PROs operating in Bulgaria (in 2016) for packaging waste.⁹⁷ PROs are registered under Bulgarian Trade Law as Shareholder Companies. Although PROs are commercial companies, according to provisions of Bulgaria's Waste Management Act, they operate as not-for profit companies.</p> <p>The largest PRO, EcoPack Bulgaria, was established in March 2004 by obligated companies led by multi-nationals with previous experience establishing EPR systems in other countries (e.g. CocaCola, Danone, Unilever, Tetra Pak and Unilever). EcoPack's 18 shareholders do not include waste management or recycling companies as EcoPack viewed this as a conflict of interest.⁹⁸ EcoPack's license was renewed in 2013 and is valid until 2017.</p> <p>The second largest PRO, EcoBulPack, has more than 100 shareholders from different sectors. It was established as an alternative to EcoPack Bulgaria by several Bulgarian companies who were not comfortable with the role of large multinational companies in EcoPack Bulgaria as well as the Bulgarian Chamber of Commerce and several branch associations (dairy products, edible</p>

⁹⁵ Bulgaria joined the EU on January 1, 2007 and was allowed 5 years to achieve the recovery and recycling targets in the Packaging Directive (i.e. January 1, 2012).

⁹⁶ <http://www.wikiwasteschemes.com/>

⁹⁷ Personal communication: Todor Bourgoudjiev, Executive Director, EcoPack Bulgaria

⁹⁸ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

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Topic	Element	Description
		<p>oils, meat processing). EcoBulPack has a lower percentage of market share than EcoPack Bulgaria but it has proportionally more small and medium-size companies as members.⁹⁹ EcoBulPack's license was renewed in 2013 and is valid until 2017.</p> <p>The other two PROs have links to waste management or recycling companies: key shareholders in BulEcoPack are the leading companies for collection of waste paper and plastics and the glass processing facility; and, the main shareholders of EcoCollect are the companies operating sorting plants in Varna and Plovdi (second and third largest cities in Bulgaria).¹⁰⁰</p> <p>The two largest PROs represent more than 75% of packaging placed on the market.¹⁰¹</p>
EPR Regulatory Requirements	<p>Where a single PRO is required to be established</p> <ul style="list-style-type: none"> - rationale for affording a monopoly - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power) - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	Bulgaria does not require a single PRO to be established.
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how 	<p>A PRO must apply to be accredited by the Ministry. Information to be submitted with the application includes:</p> <ul style="list-style-type: none"> • a financial assessment of the system for collection, recovery and recycling of the packaging

⁹⁹ Ibid.

¹⁰⁰ Ibid.

¹⁰¹ Ibid.

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Topic	Element	Description
	producers may convene themselves	<p>waste and evidence that the PRO has the necessary financing for start-up and operations;</p> <ul style="list-style-type: none"> • a plan for signing contracts with municipalities and the minimum number of citizens that will be served by packaging waste collection systems to meet the prescribed service targets; • measures to attract members; • a plan to achieve the required types and quantities of recovered and/or recycled packaging waste; • a plan for reducing the creation of packaging waste, including optimisation of packaging and reuse, as well as use of recycled materials in the production of packaging when this does not affect public safety; • measures to address temporary interruptions or a reduction in the level of packaging waste collection, recycling and/or recovery; • a communications plan for users of the collection system, including educational programs directed at schools; • measures for collection of packaging waste from households, administrative, social and public buildings, public catering establishments, trade sites and sites for recreation, amusement and tourism; and • measures for managing commodity price fluctuations.¹⁰² <p>The Waste Management Act does not allow licensing of PROs for only select sources of packaging (household, commercial, industrial) or for only select types of packaging materials (paper, metals, etc.). All PROs must be licensed for all types and sources of packaging.</p> <p>A PRO must submit an annual report containing prescribed information in order to maintain its accreditation. A PRO's performance and financial data are subject to verification by an independent professional audit organization.</p> <p>A PRO must ensure that packaging supplied by its members includes a symbol representing the PRO so that consumers and distributors know to which PRO to return the packaging. EcoPack</p>

¹⁰² Ordinance on Packaging and Packaging Waste, March 2004

Appendix D Bulgaria Jurisdictional Scan

Topic	Element	Description
		<p>Bulgaria uses the Green Dot symbol and the other approved PROs have each developed their own symbol.</p> <p>Inspections of PROs and producers are to be undertaken by independent auditors under the supervision of MOEW.</p> <p>Amendments to the Waste Management Act and the Ordinance in 2012 added the following requirements:</p> <ul style="list-style-type: none"> • All PROs must apply for a new license by the end of 2012; • A bank guarantee in the amount of 1 million BGN (app. €511,000) was required from each PRO; • PROs became responsible for auditing the quantities of packaging reported by their members; • Each PRO must serve a minimum of 500,000 residents; • PROs must report the quantity of household packaging and ICI packaging separately and by municipality; and • Information to be included in PRO annual reports was expanded.¹⁰³
	Who is liable (individual producer or PRO)	<p>Producers or importers of packed goods can act individually by establishing take back systems for used packaging where the products are sold or they can join an approved PRO.¹⁰⁴</p> <p>Where producers act individually, consumers and distributors can return used packaging (that is not marked with the trade mark of a PRO) at no cost to the seller from which they purchased the packaged good. Individual producers must receive approval for their packaging programs from directors of the Regional Inspectorate for Environment and Water (RIEW). Where individual producers operate in more than one region, the director for the Regional Inspectorate in which the producer's company is registered (under the Commercial Act) takes the lead and co-</p>

¹⁰³ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

¹⁰⁴ Ministry of Environment and Water, Republic of Bulgaria: Program for Implementation of Directive 94/62/EC on Packaging and Packaging Waste, March 2003

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Topic	Element	Description
		<p>ordinates with the other regions. Eight producers are approved to comply with the Ordinance individually.</p> <p>PROs must receive approval for their packaging programs from the Minister of Environment and Water. A PRO is responsible for the organization of a separate packaging waste collection system and for the achievement of packaging waste recycling and recovery targets on behalf of its members.</p> <p>Product taxes on packaging put on the market in Bulgaria were introduced in March 2004 (Bulgarian Lev per kilogram of packaging material) and are due by producers and importers of packed goods. Producers or importers can be exempted from the packaging tax obligation if they receive an approval to achieve the recycling targets individually or if they sign a contract with an accredited PRO.¹⁰⁵</p>
	Scope of sectoral service requirements (residential and/or ICI)	To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	<p>Nation-wide</p> <p>Separate collection of packaging waste is required only in municipalities with over 5,000 population and in resort towns.¹⁰⁶</p> <p>There are a total of 264 municipalities organized in Regional Municipal Associations. Each municipality is obliged to have a municipal waste management program and local regulations for the collection, transportation, recycling and treatment of municipal solid waste, including for packaging waste.¹⁰⁷ Municipalities have the right to impose penalties for violations of the rules for separate waste collection such as improper use of packaging waste containers (but to date reportedly have not done so).</p>

¹⁰⁵ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

¹⁰⁶ National report on the status and protection of the environment in Bulgaria in 2012

¹⁰⁷ European Commission Factsheet for Bulgaria

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Topic	Element	Description																						
	Scope and nature of collection performance targets	<p>The Ordinance stipulates an incremental increase in population to be served.¹⁰⁸</p> <table><tr><th>Year</th><th>Population Included [thous. inhabitants]</th></tr><tr><td>2003</td><td>-</td></tr><tr><td>2004</td><td>300</td></tr><tr><td>2005</td><td>600</td></tr><tr><td>2006</td><td>1200</td></tr><tr><td>2007</td><td>2400</td></tr><tr><td>2008</td><td>3000</td></tr><tr><td>2009</td><td>3600</td></tr><tr><td>2010</td><td>3900</td></tr><tr><td>2011</td><td>4050</td></tr><tr><td>2012</td><td>4200</td></tr></table>	Year	Population Included [thous. inhabitants]	2003	-	2004	300	2005	600	2006	1200	2007	2400	2008	3000	2009	3600	2010	3900	2011	4050	2012	4200
Year	Population Included [thous. inhabitants]																							
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2004	300																							
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2006	1200																							
2007	2400																							
2008	3000																							
2009	3600																							
2010	3900																							
2011	4050																							
2012	4200																							
	Scope and nature of recycling performance targets	<p>As Bulgaria did not join the EU until 2007, a negotiated transitional period to achieve the EU Packaging Directive's recycling and recovery targets in 2014 was agreed as part of Bulgaria's process to apply for membership.¹⁰⁹</p>																						

¹⁰⁸ Ministry of Environment and Water, Republic of Bulgaria: Program for Implementation of Directive 94/62/EC on Packaging and Packaging Waste, March 2003

¹⁰⁹ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

Appendix D Bulgaria Jurisdictional Scan

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		<div>Table 1. Transitional period for achievement of recycling and recovery targets applied for Bulgaria</div> <table><tr><td>Targets</td><td>2005</td><td>2006</td><td>2007</td><td>2008</td><td>2009</td><td>2010</td><td>2011</td><td>2012</td><td>2013</td><td>2014</td></tr><tr><td>Recovery</td><td>25%</td><td>35%</td><td>39%</td><td>42%</td><td>46%</td><td>48%</td><td>50%</td><td>53%</td><td>56%</td><td>60%</td></tr><tr><td>Recycling</td><td></td><td>34%</td><td>38%</td><td>42%</td><td>45%</td><td>47%</td><td>49%</td><td>52%</td><td>54,9%</td><td>55%</td></tr><tr><td>Plastics</td><td></td><td>8%</td><td>12%</td><td>14,5%</td><td>17%</td><td>19%</td><td>20%</td><td>22%</td><td>22,5%</td><td>22,5%</td></tr><tr><td>Glass</td><td></td><td>26%</td><td>33%</td><td>40%</td><td>46%</td><td>51%</td><td>55%</td><td>59,6%</td><td>60%</td><td>60%</td></tr><tr><td>Paper & cardboard</td><td></td><td>15%</td><td>15%</td><td>60%</td><td>60%</td><td>60%</td><td>60%</td><td>60%</td><td>60%</td><td>60%</td></tr><tr><td>Metals</td><td></td><td>15%</td><td>15%</td><td>50%</td><td>50%</td><td>50%</td><td>50%</td><td>50%</td><td>50%</td><td>50%</td></tr><tr><td>Wood</td><td></td><td></td><td></td><td>15%</td><td>15%</td><td>15%</td><td>15%</td><td>15%</td><td>15%</td><td>15%</td></tr></table> <div>The Bulgarian government set the following targets in its Ordinance.</div> <table><tr><th rowspan="2">Year¹¹⁰</th><th rowspan="2">Recycling %</th><th rowspan="2">Recovery %</th><th colspan="5">Recovery Targets by Material</th></tr><tr><th>paper</th><th>Glass</th><th>metals</th><th>plastics</th><th>Wood</th></tr><tr><td>2005</td><td>-</td><td>25</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2006</td><td>-</td><td>32</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2007</td><td>25</td><td>39</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2008</td><td>30</td><td>42</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2009</td><td>35</td><td>45</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2010</td><td>40</td><td>48</td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>2012</td><td>52%</td><td>53%</td><td>60%</td><td>59.6%</td><td>50%</td><td>22%</td><td>15%</td></tr><tr><td>2013</td><td>54.9%</td><td>56%</td><td>60%</td><td>60%</td><td>50%</td><td>22.5%</td><td>15%</td></tr><tr><td>2014</td><td>55%</td><td>60%</td><td>60%</td><td>60%</td><td>50%</td><td>22.5%</td><td>15%</td></tr></table>	Targets	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	Recovery	25%	35%	39%	42%	46%	48%	50%	53%	56%	60%	Recycling		34%	38%	42%	45%	47%	49%	52%	54,9%	55%	Plastics		8%	12%	14,5%	17%	19%	20%	22%	22,5%	22,5%	Glass		26%	33%	40%	46%	51%	55%	59,6%	60%	60%	Paper & cardboard		15%	15%	60%	60%	60%	60%	60%	60%	60%	Metals		15%	15%	50%	50%	50%	50%	50%	50%	50%	Wood				15%	15%	15%	15%	15%	15%	15%	Year ¹¹⁰	Recycling %	Recovery %	Recovery Targets by Material					paper	Glass	metals	plastics	Wood	2005	-	25						2006	-	32						2007	25	39						2008	30	42						2009	35	45						2010	40	48						2012	52%	53%	60%	59.6%	50%	22%	15%	2013	54.9%	56%	60%	60%	50%	22.5%	15%	2014	55%	60%	60%	60%	50%	22.5%	15%
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¹¹⁰ Information for 2012, 2013 and 2014 from the European Commission Factsheet for Bulgaria

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Topic	Element	Description
	Uses acceptable for recycling performance targets	The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities. ¹¹¹
	Geographic restrictions re processing or use	None identified
	Requirements re collection and management systems that pre-dated EPR regulation	<p>Prior to 1991, the Bulgarian recycling system was administered by the state and organized as a system of stationary and mobile buy-back centres where residents delivered sorted materials for payment. After the fall of communism, the system collapsed and the private sector filled the gap.</p> <p>Prior to the Ordinance, recycling occurred primarily through commercial operations buying scrap materials and was therefore limited to the types of waste for which the commodity price covered expenses. It was estimated that approximately 10,000 residents earned a living through scavenging and selling waste to the buy-back locations.¹¹²</p>
	Penalties for non-compliance	<p>If recycling and recovery targets are not achieved, the producers acting individually and the PROs are obligated to pay the packaging tax to the Enterprise for Management of Environmental Protection Activities, EMEPA. If the PRO does not have sufficient financial resources to pay the packaging tax, the obligation reverts to its members.</p> <p>The amount of the packaging tax is not related to the cost to collect and process packaging.¹¹³</p>

¹¹¹ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

¹¹² Ministry of Environment and Water, Republic of Bulgaria: Program for Implementation of Directive 94/62/EC on Packaging and Packaging Waste, March 2003

¹¹³ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

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Topic	Element	Description																																																												
		<div>Table 4. Product taxes on packaging waste</div> <table><tr><td></td><td colspan="5">Product taxes payable to EMEPA * (BGN/kg)</td></tr><tr><td>Material</td><td>2008</td><td>2009</td><td>2010</td><td>2011</td><td>2012</td></tr><tr><td>Plastic</td><td>1,75</td><td>1,93</td><td>2,12</td><td>2,33</td><td>2,33</td></tr><tr><td>Paper and cardboard</td><td>0,50</td><td>0,55</td><td>0,61</td><td>0,67</td><td>0,67</td></tr><tr><td>Glass</td><td>0,10</td><td>0,11</td><td>0,12</td><td>0,13</td><td>0,13</td></tr><tr><td>Metals</td><td>0,45</td><td>0,50</td><td>0,54</td><td>0,60</td><td>0,60</td></tr><tr><td>Aluminum</td><td>0,15</td><td>0,17</td><td>0,18</td><td>0,20</td><td>0,20</td></tr><tr><td>Composites</td><td>1,30</td><td>1,43</td><td>1,57</td><td>1,73</td><td>1,73</td></tr><tr><td>Wood</td><td>0,30</td><td>0,33</td><td>0,36</td><td>0,40</td><td>0,40</td></tr><tr><td>Others</td><td>0,60</td><td>0,66</td><td>0,73</td><td>0,80</td><td>0,80</td></tr></table>		Product taxes payable to EMEPA * (BGN/kg)					Material	2008	2009	2010	2011	2012	Plastic	1,75	1,93	2,12	2,33	2,33	Paper and cardboard	0,50	0,55	0,61	0,67	0,67	Glass	0,10	0,11	0,12	0,13	0,13	Metals	0,45	0,50	0,54	0,60	0,60	Aluminum	0,15	0,17	0,18	0,20	0,20	Composites	1,30	1,43	1,57	1,73	1,73	Wood	0,30	0,33	0,36	0,40	0,40	Others	0,60	0,66	0,73	0,80	0,80
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EPR Oversight	By whom	<p>Ministry of the Environment and Water through the Executive Environmental Agency and 16 Regional Inspectorates for Environment and Water (RIEW). Inspectorates are responsible for ensuring that the 58 waste management regions under their supervision comply with all environmental standards, including but not limited to packaging waste management.¹¹⁴</p> <p>With respect to packaging waste, the Ministry is responsible for i) developing national legislation and policy ii) issuing permits to PROs, oversight of PRO activities and approval of PRO annual reports; iii) registration, permitting and oversight of waste collection, sorting, recycling, recovery and disposal activities; iv) oversight of companies reporting packaging placed on the market.</p>																																																												
	Size of oversight body (e.g. budget, staff)	<p>In 1997, the Ministry of the Environment and Water had an annual budget of €4.5 M.</p> <p>The number of Ministry staff has doubled since 2002, to more than 2,000 people in 2006, on the eve of accession to the EU. The adoption and implementation of the EU's directives and regulations has meant that all directorates and departments have had to build capacity to implement the policies.</p>																																																												

¹¹⁴ European Commission Factsheet for Bulgaria

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Topic	Element	Description
	Degree of producer compliance (i.e. free riders)	A comparison of reported quantities of packaging placed on the market and municipal waste composition data suggests that approximately 30% of packaging is not being reported to a PRO, was not supplied by a producer approved to act individually and was not supplied by a producer who is paying the packaging tax to the state. Some portion of this 30% is believed to be the result of non-compliant producers, mostly small companies that are not aware of their obligation or companies that have come to be aware of their obligation but don't wish to step forward for fear of retroactive penalties.
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	Some portion of the 30% undeclared packaging is believed to be the result of companies that are members of a PRO under-reporting the quantity of packaging they supply. As PROs do not audit the quantities declared by their Members, it is left to the Regional Inspectorates for Environment and Water who are under-resourced and inexperienced.
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	<p>As a result of data irregularities, the Ministry terminated the licenses of Repack and EcoResource Bulgaria in 2013 and applied the packaging tax set out in the Ordinance.¹¹⁵</p> <p>Repack was originally established by several large wine producers and companies from the chemical industry sector. EcoResource Bulgaria was linked to the biggest waste management company in Bulgaria (Titan International Holding).</p>
	Degree of compliance with service requirements	<p>By 2006, 5 PROs had been licensed to operate but only a few collection pilot projects had been implemented serving less than 50,000 residents and the PROs were achieving their recycling targets only through buying and reselling already collected (primarily ICI) packaging. Reportedly, EcoPack Bulgaria was serving the households and the other 4 PROs were buying ICI packaging, creating significantly varying costs among the PROs.</p> <p>The Ministry, not satisfied with the collection services provided by the PROs or the method by which PROs had achieved recycling targets, did not approve the PROs' 2005 annual reports, initiated actions to withdraw PRO licenses and began planning to finance a state-run packaging collection system using packaging taxes. The prospect of a state-run system financed by packaging taxes led to a Memorandum of Understanding (MOU) between the Ministry, PROs</p>

¹¹⁵ Personal communication: Todor Bourgoudjiev, Executive Director, EcoPack Bulgaria

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Topic	Element	Description																																								
		<p>and the National Association of Municipalities in Bulgaria to:</p> <ul style="list-style-type: none">• establish a packaging collection system for at least 6 million residents by the end of 2008 with the number of residents to be served by each PRO based on their relative market share;• guaranteed investment of at least €56.1 million in collection and processing infrastructure within 2 years;• minimum expenditure of €1 per resident per year on public awareness campaigns (with half of these funds used directly by the Ministry for a national information campaign); and• minimum fees to be charged to producers that represented a five- to seven-fold increase. <p>Approval of PRO licenses was deferred for the 2 year period.</p> <p>The minimum fee rates set out in the MOU in effect standardized all PRO fee rates. The following table sets out the fee rates in the MOE compared to the packaging tax and the fee rates charged by the largest PRO, EcoPack Bulgaria.¹¹⁶</p> <p>Table 9. Comparison between licensing fees charged by RO and product taxes in 2007</p> <table><tr><th>Packaging Material</th><th>Product taxes €/kg</th><th>Old Licensing Fees²⁹ €/kg</th><th>New Memorandum Minimum Fees, €/kg</th></tr><tr><td>Plastics</td><td>0.875</td><td>0,026</td><td>0.128</td></tr><tr><td>Composites</td><td>0.665</td><td>0,026</td><td>0.154</td></tr><tr><td>Beverage cartons</td><td></td><td>0,009</td><td></td></tr><tr><td>Paper and cardboard</td><td>0.256</td><td>0,009</td><td>0.082</td></tr><tr><td>Glass</td><td>0.077</td><td>0,005</td><td>0.036</td></tr><tr><td>Metals</td><td>0.041</td><td>0,008</td><td>0.026</td></tr><tr><td>Aluminium</td><td>0.220</td><td></td><td>0.102</td></tr><tr><td>Wood</td><td>0.077</td><td>0,003</td><td>0.051</td></tr><tr><td>Other</td><td>0.665</td><td>0,008</td><td>0.184</td></tr></table> <p>²⁹ Ecopack Bulgaria licensing fees in 2005 used as an example.</p>	Packaging Material	Product taxes €/kg	Old Licensing Fees ²⁹ €/kg	New Memorandum Minimum Fees, €/kg	Plastics	0.875	0,026	0.128	Composites	0.665	0,026	0.154	Beverage cartons		0,009		Paper and cardboard	0.256	0,009	0.082	Glass	0.077	0,005	0.036	Metals	0.041	0,008	0.026	Aluminium	0.220		0.102	Wood	0.077	0,003	0.051	Other	0.665	0,008	0.184
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¹¹⁶ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

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Topic	Element	Description
		After the government changed in July 2009, the MOU was repealed on the basis that setting minimum licensing fees is against free market principles. Since 2009, EcoPack Bulgaria has decreased its fees while other PROs still use the standardized 2009 fees but negotiate discounts on a case-by-case basis. ¹¹⁷
	Degree of compliance with performance requirements	The national recovery and recycling targets were met by 2010.
	Use of penalties	In 2006, the threat of packaging taxes was used to establish the MOU that resulted in expansion of collection services and investments into processing systems. In 2013, the Ministry terminated the licenses of Repack and EcoResource Bulgaria. ¹¹⁸ Repack was originally established by several large wine producers and companies from the chemical industry sector. EcoResource Bulgaria was linked to the biggest waste management company in Bulgaria (Titan International Holding). ¹¹⁹
Competition	Forms of competition within a regulated product category	EcoPack Bulgaria contracts for all services following a strict tender procedure. ¹²⁰ EcoBulPack, BulEcoPack and EcoCollect are vertically integrated and provide packaging collection and processing services either through their subsidiaries or their shareholders (all companies with the necessary permits). ¹²¹
	Forms of competition between stewardship programs or producers in the same product category	Prior to 2006 and since the MOU was repealed, PROs compete for members on the basis of the fees they charge.

¹¹⁷ Ibid.

¹¹⁸ Personal communication: Todor Bourgoudjiev, Executive Director, EcoPack Bulgaria

¹¹⁹ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

¹²⁰ Personal communication: Todor Bourgoudjiev, Executive Director, EcoPack Bulgaria

¹²¹ Ibid.

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Topic	Element	Description
	Forms of competition in procuring and delivering collection services	<p>PROs can contract with a municipality to receive the municipality's permission to operate within the municipality and then also contract for collection and processing with private companies. Alternatively, PROs can contract with a municipality which in turn contracts for collection and processing of packaging waste.</p> <p>Where municipalities contract for collection (and processing) of packaging waste, the procurement process is subject to the Public Procurement Act.</p> <p>Where PROs are responsible for collection:</p> <ul style="list-style-type: none"> • EcoPack Bulgaria contracts for all services following a strict tender procedure. • EcoBulPack, BulEcoPack and EcoCollect are vertically integrated and provide packaging collection and processing services either through their subsidiaries or their shareholders (all companies with the necessary permits).¹²²
	Forms of competition in procuring and delivering post-collection services	<p>Where municipalities contract for (collection and) processing of packaging waste, the procurement process is subject to the Public Procurement Act.</p> <p>Where PROs contract for processing:</p> <ul style="list-style-type: none"> • EcoPack Bulgaria contracts for all services following a strict tender procedure. • EcoBulPack, BulEcoPack and EcoCollect are vertically integrated and provide packaging collection and processing services either through their subsidiaries or their shareholders (all companies with the necessary permits).¹²³

¹²² Ibid.

¹²³ Ibid.

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Topic	Element	Description
	Requirements of the jurisdiction's competition laws	<p>Bulgaria's competition law is called the Protection of Competition Act (PCA), and was adopted at the end of 2008. The new PCA aims to harmonize the national Law with the EU competition rules. The Commission for Protection of Competition (CPC) is the Bulgarian national competition authority responsible for the enforcement of the (PCA) and Article 101 and Article 102 of the Treaty on the Functioning of the European Union (TFEU).</p> <p>The PCA contains provisions to deal with three main types of improper competitive behavior:</p> <ul style="list-style-type: none"> • All types of agreements between undertakings (companies), decisions by associations of undertakings, as well as concerted practices of two or more undertakings, having as their purpose or result the prevention, restriction or distortion of competition on the relevant market; • Abuse of monopoly or dominant position; and • Any action or omission of an undertaking in the course of its business activity that is contrary to good commercial practices and damages or may damage the interests of competitors (catch-all).
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	None by the CPC though in March 2012 ECOPACK complained to CPC about unfair competition of ECOBULPACK with regard to a claim of misleading advertising of its recycling services.
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	None identified
Approach to Common Infrastructure	Who operates infrastructure	Municipalities or private companies
	Arrangements between PROs and infrastructure operators	Under the Ordinance, municipalities have a form of first right of refusal to provide collection services. The PRO is obligated to present a contract to a municipality and the municipality is obligated to reach a decision within three months (which can be extended by two months to accommodate negotiation on unacceptable clauses). The municipality can refuse the contract, thereby transferring responsibility for collection to the PRO. The PRO then must contract, under the same conditions, with a private company permitted to operate within the municipality. The PRO's contract with a private company may not hinder the functioning of the municipality's

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Topic	Element	Description
		<p>existing systems for collection of household waste and the municipality is obligated to co-operate with the PRO in determining locations for depot containers, etc. While the form of the system for collection of packaging waste is subject to negotiations between the PRO and the municipality, the municipality has the final decision.¹²⁴ In practice, municipal involvement in separate collection systems for packaging is typically limited to negotiating contracts with PROs to operate within its territory. Reportedly, municipalities are primarily interested in the visual appearance of the separate collection containers on streets, rather than in the level of collection service provided or the performance achieved.¹²⁵</p> <p>Reportedly, some municipalities were influenced in their selection of a partner PRO by the waste management company with whom they had previously contracted for collection of mixed waste that lobbied for the PRO with whom they had an established arrangement and blocked negotiations between the municipality and competing PROs. An example cited is the arrangement between EcoResource Bulgaria and Titan International Holding that assisted the PRO in contracting with almost all municipalities served by the company in 2006 (more than 2 million residents).¹²⁶</p> <p>Where PROs contract directly with private companies, the same company typically collects both residual waste under contract to the municipality and packaging waste under contract to the PRO (an exception is the capital city of Sophia).¹²⁷</p> <p>PROs are responsible for picking up, transporting and processing the collected packaging, and typically do so through contracts with companies specialized in recycling services. Some PROs (e.g. Ecobulpack) perform these activities directly as they are owned by recycling or waste management companies. Some PROs invest in processing facilities operated by private companies by purchasing equipment and leasing it to the operator.</p>

¹²⁴ Ordinance on Packaging and Packaging Waste, March 2004

¹²⁵ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

¹²⁶ Ibid.

¹²⁷ Ibid.

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Topic	Element	Description
		In the first two years following implementation of the Ordinance, the PROs purchased materials already collected by recycling companies to achieve their recycling and recovery targets. During this period, reportedly the recycling companies sold materials to the PROs at a premium above market price (€30/tonne for paper-based packaging, €50/tonne for plastics, €20/tonne for metal). ¹²⁸
	Arrangements among PROs	Reportedly, PROs compete aggressively to sign contracts with the larger municipalities where more packaging waste is available for collection, collection is more cost-effective and processing economies of scale can be more easily achieved.
	Role of government	None
	Role of another party (e.g. clearinghouse)	None
Outcomes	Have environment public poli objectives been met	<p>By December 2011, 215 municipalities with 6.3 M residents (84% of Bulgaria's population) had access to separate collection of packaging. In 2012, 85% of the population was receiving service.¹²⁹ Reportedly, more (especially smaller) municipalities have signed contracts with PROs since 2012.</p> <p>PROs offer either a 2 container (green for glass and yellow for all other packaging) or a 3 container (green for glass, blue for paper-based packaging, yellow for plastics and metals) collection system. The frequency of collection and arrangements for transportation of packaging waste vary by the terms of the specific contact between a PRO and a municipality.</p> <p>The national recovery and recycling targets were met by 2010.^{130 131}</p>

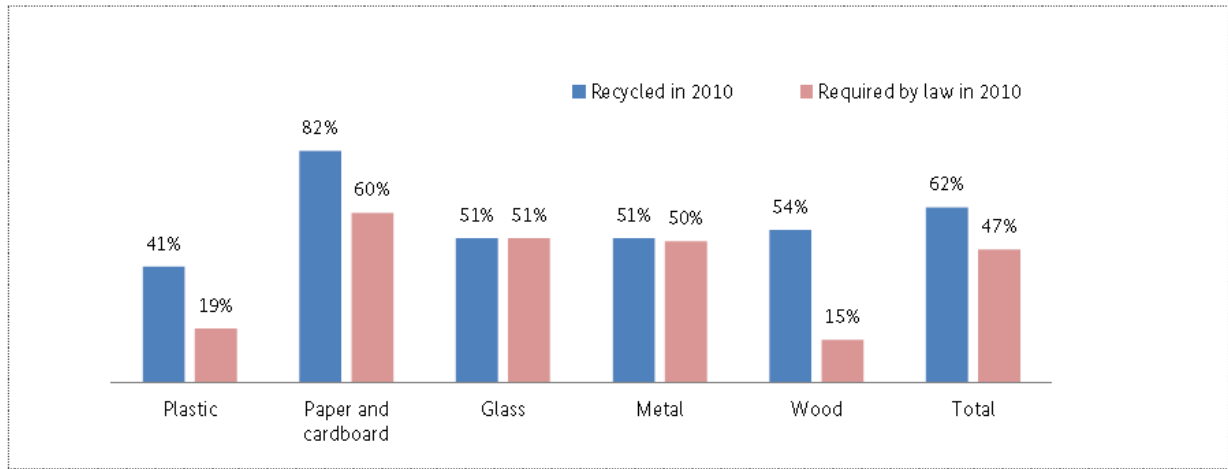
¹²⁸ Ibid.

¹²⁹ National report on the status and protection of the environment in Bulgaria in 2012

¹³⁰ European Commission Factsheet for Bulgaria

¹³¹ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

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Topic	Element	Description																																																								
		<div><p>Figure 6. Fulfilment of the targets for recycling for 2010 compared to the legally required</p><table><caption>Data for Figure 6: Recycling rates in 2010 vs. legal requirements</caption><thead><tr><th>Material</th><th>Recycled in 2010 (%)</th><th>Required by law in 2010 (%)</th></tr></thead><tbody><tr><td>Plastic</td><td>41%</td><td>19%</td></tr><tr><td>Paper and cardboard</td><td>82%</td><td>60%</td></tr><tr><td>Glass</td><td>51%</td><td>51%</td></tr><tr><td>Metal</td><td>51%</td><td>50%</td></tr><tr><td>Wood</td><td>54%</td><td>15%</td></tr><tr><td>Total</td><td>62%</td><td>47%</td></tr></tbody></table><p>Source: Executive Environment Agency</p></div> <table><thead><tr><th>Material</th><th>2012 Recycling Target (%)</th><th>2012 Recovery Target %</th><th>Recycled in 2012</th><th>Recovered in 2012</th></tr></thead><tbody><tr><td>Paper</td><td>60%</td><td></td><td>94.24%</td><td></td></tr><tr><td>Glass</td><td>59.6%</td><td></td><td>60.51%</td><td></td></tr><tr><td>Metals</td><td>50%</td><td></td><td>75.57%</td><td></td></tr><tr><td>Plastic</td><td>22%</td><td></td><td>40.75%</td><td></td></tr><tr><td>Wood</td><td>15%</td><td></td><td>53.06%</td><td></td></tr><tr><td>Total</td><td>52%</td><td>53%</td><td>66.5%</td><td>67.5%</td></tr></tbody></table>	Material	Recycled in 2010 (%)	Required by law in 2010 (%)	Plastic	41%	19%	Paper and cardboard	82%	60%	Glass	51%	51%	Metal	51%	50%	Wood	54%	15%	Total	62%	47%	Material	2012 Recycling Target (%)	2012 Recovery Target %	Recycled in 2012	Recovered in 2012	Paper	60%		94.24%		Glass	59.6%		60.51%		Metals	50%		75.57%		Plastic	22%		40.75%		Wood	15%		53.06%		Total	52%	53%	66.5%	67.5%
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	Economic outcomes	<p>The MOEW reports that implementation of separate collection systems for packaging did not result in an increase in municipal waste taxes. Costs for Bulgarian industry and consumers resulting from the Ordinance on Packaging and Packaging Waste are lower than Western</p>																																																								

Appendix D Bulgaria Jurisdictional Scan

Topic	Element	Description																																																																																
		<p>European countries. Significant funds were invested in new packaging waste collection and processing infrastructure, creating new jobs, many of which do not require special education or skills. The system provides resources to Bulgarian recycling plants and supports their competitiveness. Administrative structures have been established and experience in the management of packaging waste has been gained.</p> <p>The following table presents the fees charged by the PROs to their members in 2012.¹³² The fee structure of PROs follows the structure of the packaging tax i.e. the fee is defined in BGN per kilogram of packaging material placed on the market. The PROs have described their fee structure as providing savings for their members in comparison to paying the packaging tax that would otherwise be due to the state.</p> <p>Table 6. Licensing fees charged by the various RO</p> <table><tr><th></th><th colspan="7">Fees for 2012 per 1 kg. of the respective material</th></tr><tr><th>Material</th><th>Ecopack Bulgaria*</th><th>Ecobulpack</th><th>Ecoresource Bulgaria</th><th>Repack</th><th>Ecocollect</th><th>Bulecopack*</th><th>Recopac**</th></tr><tr><td>Plastic</td><td>0,113</td><td>0,11</td><td>0,10</td><td>0,10</td><td>n.a.</td><td>0,13</td><td>0,25</td></tr><tr><td>Paper and cardboard</td><td>0,018</td><td>0,075</td><td>0,07</td><td>0,08</td><td>n.a.</td><td>0,08</td><td>0,16</td></tr><tr><td>Glass</td><td>0,043</td><td>0,035</td><td>0,03</td><td>0,04</td><td>n.a.</td><td>0,04</td><td>0,05</td></tr><tr><td>Metals</td><td>0,030</td><td>0,025</td><td>0,10</td><td>0,03</td><td>n.a.</td><td>0,03</td><td>0,20</td></tr><tr><td>Aluminum</td><td>0,104</td><td>0,095</td><td>0,03</td><td>0,08</td><td>n.a.</td><td>0,10</td><td>0,07</td></tr><tr><td>Composites</td><td>0,140</td><td>0,135</td><td>0,12</td><td>0,12</td><td>n.a.</td><td>0,15</td><td>0,30</td></tr><tr><td>Wood</td><td>0,045</td><td>0,04</td><td>0,04</td><td>0,05</td><td>n.a.</td><td>0,10</td><td>0,10</td></tr><tr><td>Others</td><td>0,187</td><td>0,18</td><td>-</td><td>0,20</td><td>n.a.</td><td>0,05</td><td>0,36</td></tr></table> <p>* After application of maximum amount of discounts ** Licence cancelled by MOEW</p> <p>Source: The official websites of the various organizations</p>		Fees for 2012 per 1 kg. of the respective material							Material	Ecopack Bulgaria*	Ecobulpack	Ecoresource Bulgaria	Repack	Ecocollect	Bulecopack*	Recopac**	Plastic	0,113	0,11	0,10	0,10	n.a.	0,13	0,25	Paper and cardboard	0,018	0,075	0,07	0,08	n.a.	0,08	0,16	Glass	0,043	0,035	0,03	0,04	n.a.	0,04	0,05	Metals	0,030	0,025	0,10	0,03	n.a.	0,03	0,20	Aluminum	0,104	0,095	0,03	0,08	n.a.	0,10	0,07	Composites	0,140	0,135	0,12	0,12	n.a.	0,15	0,30	Wood	0,045	0,04	0,04	0,05	n.a.	0,10	0,10	Others	0,187	0,18	-	0,20	n.a.	0,05	0,36
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¹³² Ibid.

Appendix D Bulgaria Jurisdictional Scan

Topic	Element	Description																					
		<p>Ecopack Bulgaria initially charged a two-part fee for administration and packaging management costs but eliminated the administration fee in 2005 because other PROs did not charge a similar fee. In 2007, Ecopack Bulgaria also stopped allowing members to deduct the quantity of packaging they generated in their own facilities from the quantities reported to the PRO.</p> <p>Starting in 2005, Ecopack has utilized a flat fee of 150 BGN per year for producers supplying a small amount of packaging (less than 1 ton). Most of the other PROs also provide discounts from the published fees for clients on a case by case basis. These practices contravene the principle for equal treatment of members set out in the Ordinance.</p> <p>In 2014, Ecopack charged its members the following fee rates:¹³³</p> <table><tr><th colspan="7">PRO Fees as of January 1, 2014 € per tonne excluding VAT</th></tr><tr><th>Paper</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics</th><th>Composites</th><th>Wood</th></tr><tr><td>57.26</td><td>30.68</td><td>20.96</td><td>73.63</td><td>80.27</td><td>99.19</td><td>31.70</td></tr></table>	PRO Fees as of January 1, 2014 € per tonne excluding VAT							Paper	Glass	Steel	Aluminum	Plastics	Composites	Wood	57.26	30.68	20.96	73.63	80.27	99.19	31.70
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	Perceived effectiveness within jurisdiction	<p>While it is generally assumed within Bulgaria that competition among PROs keeps fee levels low, a comparison of fees in Bulgaria to neighbouring countries where no competition exists and some western European countries contradicts this prevailing view. Examples given include plastic fees charged by EcoPack Bulgaria were €0.0803/kg compared to €0.0146/kg in Romania (ECO-ROM), €0.1387/kg in Belgium (FOST Plus) and €0.02806 in France (Eco-Emballage).¹³⁴</p> <p>The same report identifies difficulties resulting from the existence of multiple competing PROs in a small country like Bulgaria:</p> <ul style="list-style-type: none">Achieving agreement about the development of a packaging collection system is practically																					

¹³³ Participation Costs Overview 2014: Pro Europe, April 2014

¹³⁴ Economic Instruments in Solid Waste Management: Case Study Bulgaria, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, November 2012

Appendix D Bulgaria Jurisdictional Scan

Topic	Element	Description
		<p>impossible;</p> <ul style="list-style-type: none"> • The different packaging collection systems do not allow the implementation of a common communication policy; • The national government and municipalities do not have a single partner with whom to negotiate and plan a national policy; • System administration costs are very high; • The possibilities for economies of scale in collection and recycling systems are limited; • Competition between PROs requires significant resources to be spent on attracting new members; and • Small PROs have very limited resources to invest in packaging collection systems.¹³⁵
	Policy gaps and/or conflicts	<p>PROs argue that buy-back centres that pre-dated the Ordinance should be closed as the majority of materials delivered by residents are stolen from PRO collection systems. However, it is believed that at least 15,000 residents rely on revenue from selling recyclable waste to buy-back centres.¹³⁶</p> <p>Reportedly, the fees charged by PROs to their members do not reflect actual costs for managing each type of material and cross-subsidy between different materials types is occurring.</p> <p>Reportedly, PROs set fees primarily based on what they think their clients will pay and believe that fees are insufficient to support development of an effective collection system. All PROs except EcoPack Bulgaria support the state establishing minimum fees.</p>
	Are changes being considered	<p>The Ministry is planning to:</p> <ul style="list-style-type: none"> • Extend the geographic coverage service requirements; • Implement corrective measures for free-riders and under-reporting by members of PROs; and • Appoint an independent party to audit obligated producers, PROs, service providers and recyclers.

¹³⁵ Ibid.

¹³⁶ Ibid.

Appendix E France Jurisdictional Scan

Topic	Element	Description
Background	Jurisdiction	France
	Size	Geographical size: 632,833.6 km ² Population: 65,856,609 (2014) GDP: €2,060.0 billion (2013) ¹³⁷
	Title of relevant legislation and/or regulation	Decree 2007-1467 of October 16 2007 integrated the following decrees into a dedicated chapter of the French Environmental Code: <ul style="list-style-type: none"> Decree 92-377 of April 1, 1992 provided the basis for a general waste household packaging management scheme through take-back or separate collection systems operated by public entities (amended); Decree 94-609 of July 13, 1994 sets out a scheme for the management of non-household packaging waste; Decree 96-1008 of November 18, 1996 sets out requirements for household waste plans; and Decree 98-638 of July 20, 1998 sets out design and labeling requirements for packaging.
	Responsible government department	Ministry of Ecology, Sustainable Development and Energy
	Designated material	Packaging waste to align with the EU Packaging Directive
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	Eco-Emballages was accredited for household packaging on November 12, 1992. Each approval period is 6 years and the accreditation was most recently renewed on January 1, 2011 for an additional 6 years. The board of directors is comprised of producers (a majority), material sector representatives and two independent directors. A number of observers may attend Board meetings including senior officials responsible for sustainable development within the Ministry of Productive Recovery and the Ministry of Trade and Tourism and the President of the National Packaging Council. Eco-Emballages is a not-for-profit limited company with the following shareholders (who do not receive dividends): <ul style="list-style-type: none"> 71.25% held by Ecopar (consumer companies and their professional organizations); 20% held by Inter Packaging (five entities representing manufacturers of materials and packaging); and

¹³⁷ <http://www.wikiwasteschemes.com/>

Appendix E France Jurisdictional Scan

Topic	Element	Description
		<ul style="list-style-type: none"> 8.75% held by distribution/retail companies.¹³⁸ <p>Adelphe was accredited for household packaging on February 5, 1993 for wine and spirits packaging. During the first three years of its operations, it focused exclusively on glass. Between 1993 and 2004, Adelphe expanded its operations to manage other materials but only up to its members' contribution for these materials.¹³⁹ In 2005, Adelphe joined the Eco-Emballages Group through the purchase by Eco-Emballages of 85% of Adelphe's shares. Adelphe continues to be accredited by the government but operates as a subsidiary to Eco-Emballages. Adelphe's accreditation was also most recently renewed on January 1, 2011 for 6 years (aligning with Eco-Emballages renewal period).</p> <p>Eco-Emballages utilizes a network of material groups (one for each packaging material) that guarantee the recycling/recovery of the specific type of household packaging waste:</p> <ul style="list-style-type: none"> Valorplast for plastics France Aluminium Recyclage - FAR for aluminum ArcelorMittal France for steel Revipac for paper-based packaging and cardboard Chambre Syndicale des Verreries Mécaniques de France / CSVMF for glass
EPR Regulatory Requirements	<p>Where a single PRO is required to be established</p> <ul style="list-style-type: none"> - rationale for affording a monopoly - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded 	France does not require a single PRO to be established.

¹³⁸ Eco-Emballages 2014 Annual Report

¹³⁹ European Commission - European Packaging Waste Management Systems Main Report, February 2001

Appendix E France Jurisdictional Scan

Topic	Element	Description
	<p>monopoly power)</p> <ul style="list-style-type: none"> - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>PROs must be accredited by the government to manage household packaging waste. Criteria for accreditation include: the setting of specific performance objectives, the proposed arrangements with other actors in the sector (including financial arrangements), access for inspection and audit, and financial guarantees. Accreditation is for a period of no more than six years.</p> <p>By law, a government comptroller sits on the board of each accredited PRO to monitor the financial management and has the authority to carry out audits.¹⁴⁰</p>
	<p>Who is liable (individual producer or PRO)</p>	<p>Packers/fillers/importers of goods that result in household packaging waste are responsible for managing the packaging waste by:</p> <ul style="list-style-type: none"> • Implementing a deposit system; • Implementing an individual recovery/recycling system that has been approved by the government; or • Participating in a collective system that is licensed by the government. <p>Producers participating in a collective system transfer their responsibilities to the PRO.</p>
	<p>Scope of sectoral service requirements (residential and/or ICI)</p>	<p>The EPR program operated by Eco Emballage is for household packaging only.</p> <p>There is no EPR program for ICI packaging. The final users of ICI packaging are required to deliver the packaging (or arrange for delivery) to permitted recovery facilities. Some sectoral associations have been established (and are financially supported) by industry to organize, on a voluntary basis, the recycling of ICI packaging waste. These associations are:</p> <ul style="list-style-type: none"> • For plastics: Elipso and EcoPSE

¹⁴⁰ Extended Producer Responsibility Chains in France Panorma 2011: Agence de l'Environnement et de la Matrise de l'Energy

Appendix E France Jurisdictional Scan

Topic	Element	Description
		<ul style="list-style-type: none"> For paper-based packaging and cardboard: Revipac For metals: Recyclacier and France Aluminium Recyclage For wood: Grow France, Sypal, SEILA¹⁴¹
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	Nation wide
	Scope and nature of collection performance targets	None specified
	Scope and nature of recycling performance targets	<p>France transposed the 2008 EU recycling targets:</p> <ul style="list-style-type: none"> 55% overall 60% for glass 22.5% for plastic 60% for paper-based packaging and cardboard 50% for metals 15% for wood <p>The First Grenelle Act established a target of 75% recycling of household packaging waste by 2012¹⁴² as part of a larger sustainable development plan to reduce climate change.</p>
	Uses acceptable for recycling performance targets	<p>The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities.¹⁴³</p>

¹⁴¹ Economic Impact of the Packaging and Packaging Waste Directive: Framework and Evolution of the Packaging Sector in France, EIMPACK, October 2011

¹⁴² Ibid.

¹⁴³ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

Appendix E France Jurisdictional Scan

Topic	Element	Description
	Geographic restrictions re processing or use	Eco-Emballages reports that 89% of the packaging it managed in 2014 was utilized in France, 10% was utilized in other EU member countries and 1% was exported to Asia. ¹⁴⁴
	Requirements re collection and management systems that pre-dated EPR regulation	18% of packaging waste was being recycled prior to the Decree 92-377 of 1992 and the accreditation of Eco-Emballages.
	Penalties for non-compliance	The penalty for non-compliance by Eco-Emballages or producers acting individually is cancellation of their accreditation.
EPR Oversight	By whom	<p>Ministry of Ecology, Sustainable Development and Energy is responsible for monitoring compliance, including achieving the recycling targets.</p> <p>Producers must report the quantity of packaging supplied, recycled and recovered to the Agency for Environment and Energy Management (ADEME).</p> <p>To monitor Eco-Emballages, the Ministry relies on reports and evaluations from ADEME and the advice of a dedicated commission for each sector comprised of representatives from the Ministry, ADEME, producers, distributors, local authorities, consumer groups, environmental advocacy groups and companies providing collection and processing services.¹⁴⁵</p>
	Size of oversight body (e.g. budget, staff)	<p>The ADEME budget in 2014 totalled €590 M plus €15 M generated from its activities, of which €181 M is dedicated to waste and the circular economy program.</p> <p>ADEME has over 1000 employees located in three headquarters sites in Angers, Paris and Valbonne, 17 regional offices (13 in France and 4 in France's overseas territories) and an office in Brussels.¹⁴⁶</p>
	Degree of producer compliance (i.e. free riders)	<p>The Ministry enforces against packaging that does include the Green Dot as the producers of this packaging have not paid fees to Eco-Emballages.</p> <p>Members are obligated, under Eco-Emballages agreement, to advise Eco-Emballages</p>

¹⁴⁴ Eco-Emballages 2014 Annual Report

¹⁴⁵ Review of the Producer Responsibility Initiative Model in Ireland, Main Report, July 2014

¹⁴⁶ <http://www.ademe.fr>

Appendix E France Jurisdictional Scan

Topic	Element	Description
		immediately of any instance of infringement of or unauthorised use of the Green Dot logo. This has allowed Eco-Emballages and/or the Ministry to take the steps necessary to bring producers into compliance. ¹⁴⁷
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	<p>As producers are not responsible for ICI packaging in France, producers must identify the portion of their packaging supplied to households when reporting to ADEME and Eco-Emballages. Where producers are uncertain about the destination of their packaging, producers may make assumptions that are to their benefit when reporting a portion of packaging as supplied to households.¹⁴⁸</p> <p>Eco-Emballages has the ability, through its membership contract, to audit members' accounting records, up to twice per year, to confirm the accuracy of the reported data. Where appropriate, Eco-Emballages negotiates the appropriate portion of packaging assumed to be supplied to households.¹⁴⁹</p>
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	The presence of a government comptroller on the board of Eco-Emballages with the responsibility to monitor Eco-Emballages' financial management likely pre-empts reporting errors on the part of the PRO.
	Degree of compliance with service requirements	Eco-Emballages was providing collection service to 99.7% of the population (64.7 M residents) through curbside (70%) or bring system (30%) collection of packaging waste in 2014. ¹⁵⁰
	Degree of compliance with performance requirements	Eco-Emballages has met the requirements imposed through its previous accreditations, with the exception of a 75% recycling rate by 2012.
	Use of penalties	Violation of the Environmental Code may be remedied by a notice to comply, administrative sanctions depending on the gravity of the non-compliance or criminal sanctions in the form of a fine up to €150,000 and two year's imprisonment. ¹⁵¹

¹⁴⁷ European Commission - European Packaging Waste Management Systems Main Report, February 2001

¹⁴⁸ Ibid.

¹⁴⁹ Ibid.

¹⁵⁰ Eco-Emballages 2014 Annual Report

¹⁵¹ Environmental law and practice in France: overview: Practical Law – a Thomson Reuters Legal Solution

Appendix E France Jurisdictional Scan

Topic	Element	Description
Competition	Forms of competition within a regulated product category	Municipalities utilize competitive procurement processes when contracting for collection and processing services for packaging waste.
	Forms of competition between stewardship programs or producers in the same product category	None as the Eco-Emballages Group owns 85% of the shares of Adelphe.
	Forms of competition in procuring and delivering collection services	Municipalities utilize competitive procurement processes when contracting for collection services for packaging waste.
	Forms of competition in procuring and delivering post-collection services	<p>Municipalities utilize competitive procurement processes when contracting for processing services for packaging waste.</p> <p>If municipalities choose to accept Eco-Emballages offer to purchase collected materials (meeting certain specifications) through its material groups, competitive procurement would not be utilized.</p> <p>If municipalities choose to have materials managed by members of identified professional waste management organizations, their competitive procurement process must include specifications to limit responsive submissions to those from members of the identified professional waste management organizations.</p>
	Requirements of the jurisdiction's competition laws	<p>Similar to other EU jurisdictions, France's competition law includes provisions regarding cartels, abuse of dominant position and merger control. French competition law distinguishes between two different types of practices: anti- competitive practices and restrictive practices. French competition laws apply to all economic activities, namely "to all production, distribution and service activities, including those which are carried out by public persons, in particular in the context of public service delegation agreements". Hence regulated corporate entities such as PROs fall under the direct scrutiny of the competition authority.</p> <p>The primary interaction between the AC and the waste recycling sector has been in the form of advocacy:</p> <ul style="list-style-type: none"> In 1994 the AC was asked to give its opinion on a draft decree on the regulation of EPR for used oil disposal to replace the previous publicly administered system for managing used oil;

Appendix E France Jurisdictional Scan

Topic	Element	Description
		<ul style="list-style-type: none"> • In 1999, it published an opinion on the conditions for organization and financing the used battery disposal sector; • In 2005 and 2010, the AC issued opinions on draft decrees on, respectively, waste electrical and electronic materials and infectious healthcare waste (syringes, injection delivery devices) used by patients in self-treatment; and • In 2012 as a result for a request for an opinion from two professional federations active in the household waste sector, it had occasion to carry out a full competition analysis of the waste management sector covered by Extended Producer Responsibility.
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	<p>In September 2010, the Competition Authority raised concerns regarding practices implemented by Éco-Emballages and Valorplast (the plastics materials group within Eco-Emballages) in the take-back and recovery of household plastic packaging waste which was resolved by the adoption of a series of commitments. These commitments allowed the procedure against Éco-Emballages and Valorplast to come to an end without any formal sanctions from the Competition Authority.</p> <p>However, the company that originally brought the complaint to the Competition Authority (DKT) brought the dispute before the commercial courts to obtain compensation for its harm caused by the anti-competitive practices committed by Valorplast and Eco-Emballages. Even though the Authority's decision to accept the commitments does not establish any anti-competitive offense as such, the Court based itself nearly exclusively on the elements observed by the Authority to decide that Valorplast and Eco-Emballages had committed a fault by abusing the dominant position which they occupy respectively in the markets of plastic household waste recovery and collective organization and collection of household waste in France. On March 30, 2015, the Paris Commercial Court rendered a decision ordering jointly Valorplast and Eco-Emballages to pay €350,000 in damages to DKT for anticompetitive practices in the household waste market.</p>

Appendix E France Jurisdictional Scan

Topic	Element	Description
		According to the Court, the abuse resulted from blocking DKT's access to the waste recovery market, particularly by (i) setting-up a system lacking in objectivity and transparency based on "non objection" letters, without which a prospective acquirer such as DKT had little chance of successfully canvassing public authorities and (ii) by the conclusion of rigid and long term agreements with public authorities, making it difficult for them to change recovery method during six years. The Court found three types of prejudice sustained by DKT to be indemnified: economic prejudice of €50,000 for the losses recorded by DKT during the implementation of the anticompetitive practices; lost opportunity to enter into agreements with local authorities valued at €200,000, based on the profit margin which DKT could have generated on these markets; and harm to reputation sustained by DKT compensated by €100,000. ¹⁵²
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	Not applicable.
Approach to Common Infrastructure	Who operates infrastructure	<p>For purposes of managing waste, municipalities are organized as inter-municipal cooperation agencies and deliver the service either through:</p> <ul style="list-style-type: none"> • Direct management using its equipment and staff; • Public procurement contract for service provision; • Delegation of a public service through a contract to operate the service; or • Agency created by the local authority that is legally and financially independent.¹⁵³ <p>In 2007, 96% of municipalities belonged to one of 2,306 inter-municipal agencies for purposes of waste collection including the separate collection of packaging wastes.¹⁵⁴</p>
	Arrangements between PROs and infrastructure operators	Eco-Emballages and municipalities enter into Action and Performance Contracts (CAP) for a term of 6 years through which Eco-Emballages pays municipalities per tonne of packaging waste managed and municipalities are responsible for collection of packaging waste. Eco-Emballages provides a standard offer to purchase collected materials (meeting certain specifications) through its material groups to provide a guaranteed outlet for municipalities. Alternatively, municipalities

¹⁵² <http://www.dentons.com/en/insights/newsletters/2015/june/23/paris-competition-newsletter/competition-news-june-2015>

¹⁵³ Economic Impact of the Packaging and Packaging Waste Directive: Framework and Evolution of the Packaging Sector in France, EIMPACK, October 2011

¹⁵⁴ Ibid.

Appendix E France Jurisdictional Scan

Topic	Element	Description
		can arrange to have the materials managed by members of identified professional waste management organizations or by another party selected through the municipality's procurement process. Municipalities are paid varying rates by material depending on which of the options they select and based on actual performance. For example, the rate paid for plastics in 2010 was €196.30/tonne if the material was sold to Valorplast (Eco-Emballages plastics material group), between €151 and €229 if the plastics were sold to a member of one of the professional trade associations and zero if municipalities selected their own contractor. The rates are reviewed annually through a committee of representatives of local authorities that have contracts with Eco-Emballages (and Adelphe). Legislation stipulates that 80% of the cost of efficient collection and sorting of household packaging waste will be covered by 2012 (up from 60% in 2010), leaving 20% of the cost of managing separately collected packaging waste with municipalities. ¹⁵⁵ Eco-Emballages also contracts with the companies that receive the packaging waste for processing and marketing.
	Arrangements among PROs	The Eco-Emballages Group owns 85% of the shares of Adelphe.
	Role of government	None
	Role of another party (e.g. clearinghouse)	None
Outcomes	Have environment public policy objectives been met	Yes. France was recycling about 18% of its packaging waste in 1992 when Eco-Emballages was accredited. France met the 2008 EU recycling targets for all materials except plastics. ¹⁵⁶ The packaging waste recycling rate was 67.1% in 2011, having risen by 1.5% per year since 2007. ¹⁵⁷ Eco-Emballages reported that 67% of household packaging was recycled in 2014, suggesting that recycling rates have plateaued. ¹⁵⁸

¹⁵⁵ Extended Producer Responsibility Chains in France Panorma 2011: Agence de l'Environnement et de la Maitrise de l'Energy

¹⁵⁶ Assessment of Results on the Reuse and Recycling of Packaging in Europe: Agence de l'Environnement et de la Maitrise de l'Energy March 2009

¹⁵⁷ Extended Producer Responsibility Chains in France Panorma 2011: Agence de l'Environnement et de la Maitrise de l'Energy

¹⁵⁸ Eco-Emballages 2014 Annual Report

Appendix E France Jurisdictional Scan

Topic	Element	Description			
		Materials	2008 Recycling Target	2009 Recycling Rates¹⁵⁹	2014 Recycling Rates¹⁶⁰
		Glass	60%	80%	85% for glass
		Plastics	22.5%	48% of PET and HDPE	55% of PET and HDPE 1% of other plastics
		Paper	60%	54%	67% 49% of cartons
		Metals	50%	111% of steel 32% of aluminum	108% for steel 37% of aluminum
		Wood	15%		
		Overall	55%	63%	67%
		<p>By 2001, Eco-Emballages was recycling 58% of household packaging and by 2011 the recycling rate for household packaging had increased to 67%. As in 2011, 67% of all household packaging was recycled. The recycling rate had increased by 1% per year on average over the decade. To increase the collection of plastic packaging, Eco-Emballages is undertaking a pilot project with 3.7 M residents to expand the types of plastic packaging accepted in the collection system from water bottles, washing-up liquid bottles, and shower gel bottles to also include polyethylene terephthalate (PET), polypropylene (PP), low-density polyethylene (LDPE), and polystyrene (PS). This is expected to increase the plastics recycling rate from 22.5% to 40%.¹⁶¹</p> <p>By 2014, 99.7% of the population (64.7 M residents) received curbside (70%) or bring system (30%) collection of packaging waste and 36,501 municipalities had contracted with Eco-Emballages (in some cases via contracts with Adelphe).¹⁶²</p> <p>Eco-Emballages uses variable fees¹⁶³ to achieve public policy objectives.¹⁶⁴</p>			

¹⁵⁹ Economic Impact of the Packaging and Packaging Waste Directive: Framework and Evolution of the Packaging Sector in France, EIMPACK, October 2011

¹⁶⁰ Eco-Emballages 2014 Annual Report

¹⁶¹ <http://www.emag.suez-environnement.com/en/sorting-plastics-new-household-waste-recycling-challenge-9747> and Eco-Emballages 2014 Annual Report

¹⁶² Eco-Emballages 2014 Annual Report

Appendix E France Jurisdictional Scan

Topic	Element	Description												
		<div><div>Table 3. Modulated PRO fees in France for packaging, electronic and electrical appliances and graphic paper</div><table><tr><th colspan="2">Packaging: Eco-Emballages – rates 2015</th></tr><tr><td>Fee reduction of 10%</td><td>Paper/cardboard packaging with more than 50% of recycled content</td></tr><tr><td>Fee increase of 50%</td><td>Glass packaging with ceramic cap Paper/cardboard Packaging for liquids with less than 50% of fibres Reinforced paper/cardboard packaging PET bottles that contain PVC or silicones with density more than 1</td></tr><tr><td>Fee increase of 100%</td><td>Non-recyclable packaging materials, e.g. ceramics</td></tr><tr><td>Fee reduction of 8%</td><td>Packaging that carries specific sorting instructions for consumers Applies to producers that organize additional prevention campaigns</td></tr><tr><td>Fee reduction of 8%</td><td>Weight reduction of more than 2% without changing the packaging material or function Volume reduction of more than 2% without changing the packaging material or function Applies to companies that develop rechargeable packaging</td></tr></table></div> <div>165</div>	Packaging: Eco-Emballages – rates 2015		Fee reduction of 10%	Paper/cardboard packaging with more than 50% of recycled content	Fee increase of 50%	Glass packaging with ceramic cap Paper/cardboard Packaging for liquids with less than 50% of fibres Reinforced paper/cardboard packaging PET bottles that contain PVC or silicones with density more than 1	Fee increase of 100%	Non-recyclable packaging materials, e.g. ceramics	Fee reduction of 8%	Packaging that carries specific sorting instructions for consumers Applies to producers that organize additional prevention campaigns	Fee reduction of 8%	Weight reduction of more than 2% without changing the packaging material or function Volume reduction of more than 2% without changing the packaging material or function Applies to companies that develop rechargeable packaging
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	Economic outcomes	<p>In 2011 89% of Eco-Emballages total expenditures were paid as funding for local authorities, amounting to €519 million. Financial support for local authorities rose by 42% between 2008 and 2013 as a result of a new subsidy scale (while recycling increased only 8.9% in this timeframe).¹⁶⁶</p> <p>In 2014 Eco-Emballages employed 220 staff and had 21,807 contracts representing 50,000 companies.¹⁶⁷</p>												

¹⁶³ The Grenelle Act 2 established the basis for linking producer fees to product design. Economic Impact of the Packaging and Packaging Waste Directive: Framework and Evolution of the Packaging Sector in France, EIMPACK, October 2011

¹⁶⁴ Products that are penalised through modulated fees may experience reduced sales in favour of other non-penalised products. Allowing producers to independently determine modulated fees may foster collusion or abuse of market power (Fleckinger and Glachant 2010). The OECD notes in an October 2015 report that authorised policy makers should therefore monitor modulated fees.

¹⁶⁵ OECD Working Party on Resource Productivity and Waste, October 2015

¹⁶⁶ Eco-Emballages 2014 Annual Report

¹⁶⁷ Ibid.

Appendix E France Jurisdictional Scan

Topic	Element	Description						
		In 2014, Eco-Emballages charged its members the following fee rates: ¹⁶⁸						
		PRO Fees as of January 1, 2014 € per tonne excluding VAT						
		Paper	Glass	Steel	Aluminum	Plastics ¹⁶⁹	Composites	Wood
		163.30	12.10	13.15	92.80	242.20	232.90	232.90
						244.70		
				280.60				
	Perceived effectiveness within jurisdiction	Considered a success as it has met performance objectives and encouraged inter-agency co-operation to achieve these objectives. ¹⁷⁰						
	Policy gaps and/or conflicts	None identified						
	Are changes being considered	<p>As an amendment to Eco-Emballages’ and Adelphe’s accreditation, a Sorting and Recycling Action Plan was approved in November 2014 to overhaul the national packaging collection and sorting system to meet the national 75% recycling target. The Plan proposed to gradually include more types of packaging (especially plastics) in the collection system and prepare action plans for each under-performing area.¹⁷¹</p> <p>The Environment and Energy Management Agency is completing a study to define a limited number of collection methods and to develop a plan to harmonise and standardize the systems previously set up by local authorities.¹⁷²</p>						

¹⁶⁸ Participation Costs Overview 2014: Pro Europe, April 2014

¹⁶⁹ Where more than one fee is listed for a material, the PRO has used sub-categories with different fee rates.

¹⁷⁰ Economic Impact of the Packaging and Packaging Waste Directive: Framework and Evolution of the Packaging Sector in France, EIMPACK, October 2011

¹⁷¹ Eco-Emballages 2014 Annual Report

¹⁷² Ibid.

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
Background	Jurisdiction	Germany
	Size	Geographical size: 357,340 km ² Population: 80,780,000 (2014) GDP: €2,737.6 billion (2013) ¹⁷³
	Title of relevant legislation and/or regulation	Packaging Ordinance (Verpackungsverordnung) 1991 with 7 subsequent amendments including: in 1993, amendments to the recycling performance targets; in 2009, introduction of central registry for obligated companies and use of Declaration of Compliance; in 2015, closing self-compliance loopholes (that almost doubled the quantity of reported packaging by obligated companies). ¹⁷⁴
	Responsible government department	Federal Ministry of the Environment and Infrastructure
	Designated material	Packaging waste to align with the EU Packaging Directive Packaging including transport packaging, grouped packaging and sales packaging. Sales packaging is packaging that is unpacked and disposed of by the user of the packaged product. A distinction is made between sales packaging for private end consumers (Section 6 of the Packaging Ordinance) and commercial end consumers (Section 7 of the Packaging Ordinance). ¹⁷⁵
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	9 PROs are approved in all 16 German Federal States <ul style="list-style-type: none"> • BellandVision GmbH: for-profit, owned by Sita-Suez • Duales System Deutschland (DSD) GmbH: for-profit, owned by private investors • ELS Europäische Lizenzierungssysteme GmbH: for-profit, owned by private investors • INTERSEROH Dienstleistungs GmbH: for-profit, owned by ALBA Group • Landbell AG für Rückhol-Systeme: for-profit, private • Reclay Vfw GmbH: for-profit, private (originally Redual and Vfw) • RKD Recycling Kontor Dual GmbH & Co. KG: for-profit, private

¹⁷³ <http://www.wikiwasteschemes.com/>

¹⁷⁴ Competition and Extended Producer Responsibility – Lessons from Germany's competitive marketplace: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH, February 2015

¹⁷⁵ Ordinance on the Avoidance and Recovery of Packaging Wastes: August 1998, as last amended

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
		<ul style="list-style-type: none"> • Veolia Umweltservice Dual GmbH: for-profit, owned by Veolia waste management • Zentek GmbH & Co. KG: for-profit, owned by 3 independent medium-sized waste management companies based in Germany¹⁷⁶ <p>Remondis, a recycling company with 6 divisions across Germany, ceased operations as a PRO in 2015.¹⁷⁷</p>
EPR Regulatory Requirements	<p>Where a single PRO is required to be established</p> <ul style="list-style-type: none"> - rationale for affording a monopoly - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power) - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	Germany does not require a single PRO to be established.
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>Section 11 of the Packaging Ordinance states that “manufacturers and distributors may call upon third parties to fulfil the obligations laid down in this Ordinance”.¹⁷⁸</p> <p>Duales System Deutschland GmbH (DSD) was the only PRO from 1991 (when the Packaging Ordinance was first proclaimed) until 2001. During this period DSD operated as a not-for-profit PRO with private and municipal subcontractors.¹⁷⁹</p>

¹⁷⁶ Overview of the German Packaging Ordinance: Chambers of Commerce and Industry, 2014

¹⁷⁷ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

¹⁷⁸ Ordinance on the Avoidance and Recovery of Packaging Wastes: August 1998, as last amended

¹⁷⁹ Germany: EPR for packaging waste – performance and EU minimum requirements: Helmut Schmitz, Head of Public Affairs, DSD GmbH, March 2016

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
		<p>Prior to October 2014, obligated companies could choose to manage their sales packaging directly (self-compliance) or join a collective scheme. As of 2015, obligated companies must join a collective scheme to manage sales packaging delivered to households. Obligated companies can choose to manage their sales packaging delivered to businesses directly or join a collective scheme.¹⁸⁰</p> <p>More than 20 antitrust cases related to packaging waste have been investigated since 2000. As a result, waste management company involvement in the governance of DSD ended in 2003, DSD was sold to private investors in 2005 and obligated companies, material suppliers and retailers are no longer allowed to be DSD shareholders.¹⁸¹ Another PRO was approved in 2003 and a further 8 PROs have been approved since 2008. (One PRO has since ceased operations.) DSD's market share had declined to ~45% by 2006. Three PROs have a market share between 10% and 20% and the remaining PROs have small percentages of the remaining market share.¹⁸²</p>
	Who is liable (individual producer or PRO)	Individual producer
	Scope of sectoral service requirements (residential and/or ICI)	<p>To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.</p> <p>The 9 PROs manage packaging from households and from commercial locations such as restaurants, hospital, offices, etc.</p>
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	<p>Collection must be provided for the entire country in co-ordination with municipalities.¹⁸³</p> <p>The household collection system for packaging must be aligned with the municipal household collection system for garbage (hence the description of the German packaging EPR program as a “dual system”) including reaching agreement on the method and frequency of collection. The</p>

¹⁸⁰ Overview of the German Packaging Ordinance: Chambers of Commerce and Industry, 2014

¹⁸¹ Extended Producer Responsibility and Competition – The German Experience: Arno Rasek, Federal Cartel Office, Germany, February 2014

¹⁸² Packaging Waste Management in Europe in a state of flux – the transition into competition: Dr. Fritz Flanderka, Reclay Group, 2013

¹⁸³ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

Appendix F Germany Jurisdictional Scan

Topic	Element	Description																					
Scope and nature of collection performance targets		household collection system for packaging, including the collection system cost, is shared by all 9 PROs according to market share. ¹⁸⁴																					
		There are no collection targets in the current Packaging Ordinance.																					
		Collection targets (and recycling efficiency targets) were set out in the Packaging Ordinance in 1991 but were replaced with recycling performance targets in 1993. ¹⁸⁵																					
		<table><tr><th>Collection Rates in Packaging Ordinance 1991</th><th>On January 1 1993</th><th>On July 1 1995</th></tr><tr><td>Glass</td><td>60%</td><td>80%</td></tr><tr><td>Tinplate</td><td>40%</td><td>80%</td></tr><tr><td>Aluminium</td><td>30%</td><td>80%</td></tr><tr><td>Paper, cardboard</td><td>30%</td><td>80%</td></tr><tr><td>Plastics</td><td>30%</td><td>80%</td></tr><tr><td>Composites</td><td>20%</td><td>80%</td></tr></table>	Collection Rates in Packaging Ordinance 1991	On January 1 1993	On July 1 1995	Glass	60%	80%	Tinplate	40%	80%	Aluminium	30%	80%	Paper, cardboard	30%	80%	Plastics	30%	80%	Composites	20%	80%
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	<table><tr><th>Recycling Efficiency Rates in Packaging Ordinance 1991</th><th>On January 1 1993</th><th>On July 1 1995</th></tr><tr><td>Glass</td><td>70%</td><td>90%</td></tr><tr><td>Tinplate</td><td>65%</td><td>90%</td></tr><tr><td>Aluminium</td><td>60%</td><td>90%</td></tr><tr><td>Paper, cardboard</td><td>60%</td><td>80%</td></tr><tr><td>Plastics</td><td>30%</td><td>80%</td></tr><tr><td>Composites</td><td>30%</td><td>80%</td></tr></table>	Recycling Efficiency Rates in Packaging Ordinance 1991	On January 1 1993	On July 1 1995	Glass	70%	90%	Tinplate	65%	90%	Aluminium	60%	90%	Paper, cardboard	60%	80%	Plastics	30%	80%	Composites	30%	80%	
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¹⁸⁴ Overview of the German Packaging Ordinance: Chambers of Commerce and Industry, 2014

¹⁸⁵ Ordinance on the Avoidance and Recovery of Packaging Wastes: August 1998, as last amended

Appendix F Germany Jurisdictional Scan

Topic	Element	Description																																																																				
	Scope and nature of recycling performance targets	<table><tr><th rowspan="2">Targets¹⁸⁶</th><th colspan="2">Packaging Ordinance 1991¹⁸⁷</th><th colspan="3">Packaging Ordinance 1993</th><th rowspan="2">Packaging Ordinance 2009</th><th rowspan="2">EU Targets for 2025</th><th rowspan="2">Draft Recyclables Act</th></tr><tr><th>Jan 1993</th><th>July 1995</th><th>Jan 1993</th><th>Jan 1996</th><th>Jan 1998</th></tr><tr><td>Glass</td><td>42%</td><td>72%</td><td>40%</td><td>70%</td><td>70%</td><td>75%</td><td>75%</td><td>90%</td></tr><tr><td>Tinplate</td><td>26%</td><td>72%</td><td>30%</td><td>70%</td><td>70%</td><td>70%</td><td></td><td></td></tr><tr><td>Aluminium</td><td>18%</td><td>72%</td><td>20%</td><td>70%</td><td>70%</td><td>60%</td><td>75%</td><td>90%</td></tr><tr><td>Paper, cardboard</td><td>18%</td><td>64%</td><td>10%</td><td>50%</td><td>60%</td><td>70%</td><td>75%</td><td>90%</td></tr><tr><td>Plastics</td><td>9%</td><td>64%</td><td>10%</td><td>50%</td><td>60%</td><td>60%</td><td>55%</td><td>72%</td></tr><tr><td>Composites¹⁸⁸</td><td>6%</td><td>64%</td><td>10%</td><td>50%</td><td>60%</td><td>60%</td><td></td><td></td></tr></table>	Targets ¹⁸⁶	Packaging Ordinance 1991 ¹⁸⁷		Packaging Ordinance 1993			Packaging Ordinance 2009	EU Targets for 2025	Draft Recyclables Act	Jan 1993	July 1995	Jan 1993	Jan 1996	Jan 1998	Glass	42%	72%	40%	70%	70%	75%	75%	90%	Tinplate	26%	72%	30%	70%	70%	70%			Aluminium	18%	72%	20%	70%	70%	60%	75%	90%	Paper, cardboard	18%	64%	10%	50%	60%	70%	75%	90%	Plastics	9%	64%	10%	50%	60%	60%	55%	72%	Composites ¹⁸⁸	6%	64%	10%	50%	60%	60%		
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	Packaging made from materials for which no recovery quotas are specified in the Packaging Ordinance are to be recycled where technically possible and economically reasonable. ¹⁸⁹																																																																					
Uses acceptable for recycling performance targets	At least 60% of the plastics collected must be by managed through processes in which new material of the same substance is replaced or the plastic remains available for further use as a material (mechanical recycling). ¹⁹⁰																																																																					
	Composites must be recycled with their principal material component unless recycling of a different material component approximates more closely the objectives of closed substance cycle management, and the other components are also recovered. ¹⁹¹																																																																					

¹⁸⁶ Ordinance on the Avoidance and Recovery of Packaging Wastes: August 1998, as last amended

¹⁸⁷ Calculated from the collection targets and recycling efficiency targets in the 1991 version of the Packaging Ordinance for purposes of comparison with recycling performance targets in subsequent versions of the Packaging Ordinance.

¹⁸⁸ Where composites are collected separately, separate evidence is required. Where composites are collected with other materials, the quota is to be verified by suitable sampling.

¹⁸⁹ Ordinance on the Avoidance and Recovery of Packaging Wastes: August 1998, as last amended

¹⁹⁰ Ibid.

¹⁹¹ Ibid.

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
		<p>In the case of packaging manufactured directly from renewable raw materials, energy recovery is considered equivalent to recycling.¹⁹²</p> <p>Packaging may not be used as fill material.¹⁹³</p> <p>The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities.¹⁹⁴</p>
	Geographic restrictions re processing or use	None (however, >90 % of packaging materials are managed within Germany ¹⁹⁵)
	Requirements re collection and management systems that pre-dated EPR regulation	Some regional requirements for refillable packaging; deposits on one way PET bottles; no curbside collection from households prior to Packaging Ordinance in 1991. ¹⁹⁶
	Penalties for non-compliance	<p>€50,000 per violation.¹⁹⁷ Germany does not publish violations.</p> <p>Reportedly few penalties have been issued since Packaging Ordinance came into force in 1991.¹⁹⁸</p>

¹⁹² Ibid.

¹⁹³ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

¹⁹⁴ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

¹⁹⁵ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

¹⁹⁶ Germany, Garbage, and the Green Dot - Challenging the Throwaway Society: Bette K. Fishbein, INFORM Inc., Risk Reduction Engineering Laboratory Office of Research and Development, U.S. Environmental Protection Agency, 1994

¹⁹⁷ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

¹⁹⁸ Ibid.

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
EPR Oversight	By whom	Oversight is the responsibility of environmental enforcement authorities at the state or county level (local Chambers of Industry and Commerce per Section 10(5) of the Packaging Ordinance). ¹⁹⁹ There is no central agency or co-ordination of enforcement activities.
	Size of oversight body (e.g. budget, staff)	Each state or county has 1 FTE responsible for all environmental compliance issues. ²⁰⁰
	Degree of producer compliance (i.e. free riders)	An estimated 30% of obligated producers are non-compliant, in part because the Packaging Ordinance is interpreted and applied inconsistently (e.g. definitions of obligated party) by the states and counties responsible for enforcement. ²⁰¹
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	The names and addresses of companies required to submit a declaration are published in an online register (www.ihk-ve-register.de). The companies post their Declarations of Compliance in a protected intranet. Data must be audited by an authorized accountant, tax consultant, registered auditor or independent expert. Some portion of the 30% producer non-compliance is thought to be the result of obligated companies inaccurately assessing their obligation. As audits of the Declarations of Compliance can be completed by the company's financial auditor, these inaccurate assessments may not be properly identified. ²⁰²
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	PROs enter their customer data and the packaging quantities of their customers into the same protected intranet used by obligated producers to submit their Declarations of Compliance. PROs do not have access to the Declarations of Compliance or to data reported by other PROs. PROs must provide verifiable evidence of the quantities collected and the quantities directed to recycling and to energy recovery and this evidence must be certified by an independent expert. ²⁰³
	Degree of compliance with service requirements	Collection services are being provided to the required geographic areas nation-wide.

¹⁹⁹ Ordinance on the Avoidance and Recovery of Packaging Wastes: August 1998, as last amended

²⁰⁰ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

²⁰¹ Ibid.

²⁰² Ibid.

²⁰³ A person whose qualifications have been ascertained by a member of the German Accreditation Council, an independent environmental verifier pursuant to section 9 or an environmental verification organisation pursuant to section 10 of the Environmental Audit Act or a person publicly appointed pursuant to section 36 of the Trade Code.

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
	Degree of compliance with performance requirements	Recycling targets are being exceeded. ²⁰⁴
	Use of penalties	PROs are exceeding targets so no penalties have been levied for performance.
Competition	Forms of competition within a regulated product category	PROs jointly tender to procure collection services. ²⁰⁵ Individual PROs procure processing and marketing services using competitive procurement processes (unless the PRO provides the service directly). ²⁰⁶
	Forms of competition between stewardship programs or producers in the same product category	PROs compete for members based on their relative efficiency in processing and marketing their allocated share of collected tonnes and on their relative efficiency in administering their organization. As PROs share collection costs based on market share, PROs do not compete based on collection costs.
	Forms of competition in procuring and delivering collection services	Tenders for collection services are issued by PROs acting jointly. ²⁰⁷
	Forms of competition in procuring and delivering post-collection services	Tenders for sorting collected packaging are issued individually by PROs (unless PRO provides this service directly). ²⁰⁸
	Requirements of the jurisdiction's competition laws	German Competition law is embodied in the <i>German Act Against Restraints of Competition</i> and is enforced by an independent competition authority known as The Bundeskartellamt. The 8th amendment to the <i>German Act against Restraints of Competition</i> came into force on June 30, 2013. The main purpose of the 8th Amendment is to achieve greater harmonization between German law and EU law and to legislate explicitly for certain substantive and procedural rules which had already been applied in practice.

²⁰⁴ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

²⁰⁵ Extended Producer Responsibility and Competition – The German Experience: Arno Rasek, Federal Cartel Office, Germany, February 2014

²⁰⁶ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

²⁰⁷ Extended Producer Responsibility and Competition – The German Experience: Arno Rasek, Federal Cartel Office, Germany, February 2014

²⁰⁸ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
		<p>Similar to EU competition Law, German competition law prohibits cartels and addresses abuse of dominant position by a dominant firm in a market. There are also prohibitions on restrictive trade practices such as refusal to supply and compelling competitors to merge.</p> <p>Specific requirements include: equal access by residents and small businesses to collection services; common use of collection infrastructure by competing PROs; no abuse of market-dominant position of larger PROs; no abuse of clearing house function organized collectively by PROs.²⁰⁹</p>
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	More than 20 antitrust cases related to packaging waste have been investigated since 2000. In 2004, the anti-trust office required DSD to change organizational control (remove waste management companies) and privatize (remove obligated industry, material suppliers and retailers as shareholders). ²¹⁰
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	Waste management companies operating a PRO in Germany may benefit from synergies with their own waste management operations in other countries.
Approach to Common Infrastructure	Who operates infrastructure	<p>Curbside collection infrastructure: private or municipal collectors (whoever wins the tenders put out by the PROs)²¹¹</p> <p>Glass depots: municipalities</p>
	Arrangements between PROs and infrastructure operators	The Packaging Ordinance requires that packaging be collected from all households. From 1991 to 2003, DSD had contracts with municipal or private collectors operating in the 458 municipal collection districts. Since 2003, collectors must offer a pro rata contract to all PROs to accommodate shared use of the collection infrastructure. Collection costs are pro-rated among PROs based on market share. ²¹² PROs are “jointly and severally liable” for these costs (Section 10 (7) of the Packaging Ordinance). ²¹³

²⁰⁹ Extended Producer Responsibility and Competition – The German Experience: Arno Rasek, Federal Cartel Office, Germany, February 2014

²¹⁰ Ibid.

²¹¹ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

²¹² Competition and Extended Producer Responsibility – Lessons from Germany’s competitive marketplace: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH, February 2015

²¹³ Ordinance on the Avoidance and Recovery of Packaging Wastes: August 1998, as last amended

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
		<p>The collection system cost includes curbside collection costs for packaging (resulting from tendered contracts) and payments to municipalities for use of glass depot sites including site cleanup and resident communications. Of the tendered collection costs, it is assumed that 25% of the total paper collected is paper packaging for which PROs are responsible.²¹⁴</p> <p>Collected packaging waste is separated into 9 piles when delivered to a receiving facility, with the piles sized to reflect the relative market share of the 9 PROs. Each PRO arranges to pick up its allotted pile at each receiving facility.²¹⁵</p>
	Arrangements among PROs	<p>Collection contracts are tendered every 3 years. Responsibility to administer the tendering is assigned by lot (according to PRO market share) to one compliance scheme for each collection district. A PRO must bear at least 50% of the collection costs in the collection districts for which it had responsibility to administer the tendering.²¹⁶</p> <p>Each PRO is responsible for processing and marketing its allocated share of the collected tonnes. Some smaller PROs arrange to have larger PROs process and market their allocated packaging.²¹⁷</p>
	Role of government	No direct role but anti-monopoly agency scrutinizes the clearing house function operated jointly by PROs to ensure it is not acting as a cartel. ²¹⁸
	Role of another party (e.g. clearinghouse)	Clearing house function established in 2008 through contracts among PROs with a neutral auditor, retained jointly by the PROs, to calculate the market share of each PRO. The market share is the basis for allocation of collection costs and allocation of collected tonnes to each PRO. ²¹⁹

²¹⁴ Glass is collected separately (three colours) in a depot system. Paper (including paper packaging, magazines and newspaper) is collected separately from packaging made of plastic, steel, aluminum and composite materials.

²¹⁵ Extended Producer Responsibility and Competition – The German Experience: Arno Rasek, Federal Cartel Office, Germany, February 2014

²¹⁶ Ibid.

²¹⁷ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

²¹⁸ Ibid.

²¹⁹ Ibid.

Appendix F Germany Jurisdictional Scan

Topic	Element	Description					
Outcomes	Have environment public policy objectives been met	Collection infrastructure has been established.					
		Recycling targets have been exceeded. Eurostat reports Germany's recycling performance as 71.3%.					
		Material	Packaging Ordinance 2009	2013 Actuals		EU Targets for 2025	Working Draft of Recyclables Act
				Total	Recycling		
		Glass	75%	87.9%	87.9%	75%	90%
		Tinplate	70%	96.5%	96.5%		
		Aluminium	60%	93.9%	90.2%	75%	90%
		Paper, cardboard	70%	99.7%	83.3%	75%	90%
	Plastics	60%	100%	58.6%	55%	72%	
	Composites	60%	99.6%	76.2%			
Economic outcomes	Creation of jobs, infrastructure and new technology for sorting and recycling. ²²⁰						
	In 2003, the Packaging Ordinance was amended to introduce a deposit for single-use beverage containers which had a major impact on materials managed and system financing by the PROs. ²²¹						
	Costs reduced substantially between 1998 and 2012: from ~€2 B in 1998 to ~€825 M in 2011. Some suggest that this cost reduction is the result of competition among PROs as producers can choose a more efficient PRO. Others suggest that the cost reduction is the result of competition						

²²⁰ Ibid.

²²¹ Competition and Extended Producer Responsibility – Lessons from Germany's competitive marketplace: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH, February 2015

Appendix F Germany Jurisdictional Scan

Topic	Element	Description																					
		<p>eventually introduced at the waste management operations level. As a result of post-launch financial difficulties in 1993, DSD signed 10-year contracts with waste management companies and only began using tenders for packaging waste collection and sorting in 2003.²²²</p> <p>In 2014, DSD charged its members the following fee rates:²²³</p> <table><tr><th colspan="7">PRO Fees as of January 1, 2014 € per tonne excluding VAT</th></tr><tr><th>Paper</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics</th><th>Composites</th><th>Wood</th></tr><tr><td>3.00</td><td>1.00</td><td>5.00</td><td>13.00</td><td>17.00</td><td>13.00</td><td>2.00</td></tr></table> <p>There has been an erosion of the financial base to deliver environmental outcomes because of non-compliance i.e. collected quantities of certain materials (e.g. packaging other than glass and paper/cardboard) exceed quantities reported by obligated companies. Retailers contributed extra funds in 2014 to meet the PROs’ obligation to collectors to address the financing gap. In the following graph, lightweight packaging is aluminum, steel, plastic and composite packaging and ‘licensed packaging’ refers to packaging reported by registered producers.²²⁴</p>	PRO Fees as of January 1, 2014 € per tonne excluding VAT							Paper	Glass	Steel	Aluminum	Plastics	Composites	Wood	3.00	1.00	5.00	13.00	17.00	13.00	2.00
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²²² Development of Guidance on Extended Producer Responsibility (EPR) Final Report, 2014: Prepared for the European Commission – DG Environment by: BIO Intelligence Service in partnership with Arcadis, Ecologic, Institute for European Environmental Policy (IEEP), Umweltbundesamt (UBA)

²²³ Participation Costs Overview 2014: Pro Europe, April 2014

²²⁴ Competition and Extended Producer Responsibility – Lessons from Germany's competitive marketplace: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH, February 2015

Appendix F Germany Jurisdictional Scan

Topic	Element	Description																											
		<table border="1"> <thead> <tr> <th>Year</th> <th>Collected lightweight packaging</th> <th>Licensed lightweight packaging</th> </tr> </thead> <tbody> <tr> <td>2008</td> <td>2,250</td> <td>1,089</td> </tr> <tr> <td>2009</td> <td>2,273</td> <td>1,282</td> </tr> <tr> <td>2010</td> <td>2,318</td> <td>1,165</td> </tr> <tr> <td>2011</td> <td>2,361</td> <td>1,199</td> </tr> <tr> <td>2012</td> <td>2,451</td> <td>1,205</td> </tr> <tr> <td>2013</td> <td>2,451</td> <td>1,117</td> </tr> <tr> <td>2014</td> <td>2,451</td> <td>820 (Estimate)</td> </tr> <tr> <td>2015</td> <td>2,451</td> <td>1,236</td> </tr> </tbody> </table> <p> —●— Collected lightweight packaging —●— Licensed lightweight packaging </p>	Year	Collected lightweight packaging	Licensed lightweight packaging	2008	2,250	1,089	2009	2,273	1,282	2010	2,318	1,165	2011	2,361	1,199	2012	2,451	1,205	2013	2,451	1,117	2014	2,451	820 (Estimate)	2015	2,451	1,236
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	Perceived effectiveness within jurisdiction	<p>Consumers satisfied with collection service.²²⁵</p> <p>System over-performing against recycling performance targets.</p> <p>Criticism mainly related to lack of proper enforcement of free riders.²²⁶</p>																											
	Policy gaps and/or conflicts	<p>Clear definitions, requirements for operation and documentation with consistent interpretation and application (not currently occurring due to decentralized enforcement).²²⁷</p> <p>Allocation of collection costs and collected tonnes by market share creates an incentive to under-report the quantity of packaging supplied by a PRO's members by redefining the packaging as transport or commercial packaging, by declaring higher cost materials (e.g. composites) as lower cost materials (e.g. paper) or simply not declaring some portion of the packaging.</p>																											
	Are changes being considered	<p>Government is seeking to increase packaging recycling targets and to introduce incentives for eco-design. Government is also seeking to leverage the existing collection system by</p>																											

²²⁵ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

²²⁶ Ibid.

²²⁷ Ibid.

Appendix F Germany Jurisdictional Scan

Topic	Element	Description
		<p>designating non-packaging items made of metals and plastics under EPR.²²⁸</p> <p>Industry is lobbying for creation of a central enforcement agency under the control of the German Environment Agency.²²⁹</p> <p>Municipalities are lobbying to gain control over the collection system in order to directly access payments from obligated companies. This is opposed by industry, fearing cost increases and lower material quality under municipal control.²³⁰</p>

²²⁸ Ibid.

²²⁹ Competition and Extended Producer Responsibility – Lessons from Germany’s competitive marketplace: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH, February 2015

²³⁰ Personal communication: Ursula Denison, Head of Sales, Marketing and International Services, DSD GmbH

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
Background	Jurisdiction	Ireland
	Size	Geographical size: 69,797 km ² Population: 4,604,029 (2014) GDP: €164.049 billion (2013) ²³¹
	Title of relevant legislation and/or regulation	The Waste Management Act, 1996 (established a legislative basis for producer responsibility) Packaging Directive, 1997 (amended in 2003, 2004, 2006, 2007) Waste Management (Packaging) Regulations 2003 (amended in 2004, 2006, 2007 and 2014)
	Responsible government department	Department of the Environment, Community and Local Government (DoEGCL)
	Designated material	Packaging waste to align with the EU Packaging Directive
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	Repak Ltd. is a not for profit company set up by Irish business in 1997. ²³² Repak is owned by its members but is open to all suppliers of primary, secondary and tertiary packaging. Repak was originally granted approval in June 1997 by the Minister for the Environment and Local Government and has been operational since July 1997. The approval granted to Repak that was due to expire on December 31, 2012 was subject to a number of conditions including completing a strategic review. In 2013 two short term temporary approvals were granted to Repak by the Minister while the strategic review was completed. On completion of the review, the Minister approved Repak for a five year term until December 31, 2018. Conditions placed on Repak as part of this approval include: specific reporting requirements; submission of any proposed changes to Repak's subsidy to the government for review; and, achievement of Ireland's national recycling and recovery targets. ²³³
atory Re	Where a single PRO is required to be established	Ireland does not require a single PRO to be established.

²³¹ <http://www.wikiwasteschemes.com/>

²³² Review of the Producer Responsibility Initiative Model in Ireland – Annex to the Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, May 2013

²³³ Ibid.

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
	<ul style="list-style-type: none"> - rationale for affording a monopoly - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power) - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>The legislation allows for the possibility of more than one PRO as it refers to cooperation between PROs to meet targets. However, the legislation does not set out the conditions under which more than one PRO can be approved.</p> <p>A compliance scheme must submit an application to be approved by the Minister. The information to be included in the application is set out in the Regulations and includes, for example, a proposal for corporate governance including representation of small and medium enterprises on the Board, a proposal for a contingency reserve, a copy of the rules of membership together with details of the membership fee structure, a declaration that no producer applying for membership will be discriminated against, a proposal for recovery and recycling of packaging waste including a business plan and a financial plan, annual packaging waste recovery and recycling targets, including material-specific recycling targets and a proposal for determining and verifying the level of recovery and recycling of packaging waste.²³⁴</p> <p>The Minister may set conditions on approval of a scheme related to, for example, governance, contingency reserve, rules of membership and fee structure, non-discrimination of members, co-</p>

²³⁴ Waste Management (Packaging) Regulation

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
		<p>operation with other approved compliance organizations. The Minister can also revoke approval or require a new application for approval.²³⁵</p> <p>Repak was approved by the Minister for the Environment, Community and Local Government to operate as a compliance scheme for packaging recovery in 1997.</p> <p>ERP Ireland applied to be an approved body for packaging in 2009. No decision has been made by the DoECLG.</p>
	Who is liable (individual producer or PRO)	<p>Producers (referred to as major producers under the regulations) have responsibilities for the recovery of packaging waste from their customers. Major producers have the option of either complying with their producer responsibility obligations individually or collectively with other major producers located within the functional area of a local authority (i.e. self-compliance), or alternatively, or obtaining an exemption from those requirements by becoming a member of a packaging waste PRO.</p> <p>Producers who self-comply must: register with the government annually; pay an annual fee of €15 per tonne of packaging supplied (subject to limits of €500 minimum and €15,000 maximum); provide segregated receptacles on their premises for the acceptance of packaging waste with on-site signage, public advertising; report data annually.²³⁶</p> <p>Major producers cannot purchase packaging waste from other major producers in order to fulfil their obligations.</p>
	Scope of sectoral service requirements (residential and/or ICI)	To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.
	Scope and nature of collection service requirements (e.g.	Information on the proposed collection system must be included in an application by a PRO for approval by the Minister.

²³⁵ Ibid.

²³⁶ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description																
	geographic coverage, type of collection service)																	
	Scope and nature of collection performance targets	The agreement between the Minister and Repak requires Repak to meet 20% of the national target with household packaging and the remaining 80% can be non-municipal packaging waste. ²³⁷																
	Scope and nature of recycling performance targets	<table><tr><th>Material</th><th>Packaging Targets 2011²³⁸</th></tr><tr><td>Cardboard</td><td>60%</td></tr><tr><td>Plastic</td><td>22.5%</td></tr><tr><td>Metals</td><td>50%</td></tr><tr><td>Glass</td><td>60%</td></tr><tr><td>Wood</td><td>15%</td></tr><tr><td>Overall recycling target</td><td>55%</td></tr><tr><td>Overall recovered</td><td>60%</td></tr></table> <p>Packaging self-compliers are responsible for meeting their own recycling and recovery target. Repak is responsible for the achievement of the national targets in accordance with its approval. As such, any producer switching from Repak to self-compliance will reduce Repak’s ability to meet the national targets as the PRO’s income will reduce while its target will remain the same.</p>	Material	Packaging Targets 2011 ²³⁸	Cardboard	60%	Plastic	22.5%	Metals	50%	Glass	60%	Wood	15%	Overall recycling target	55%	Overall recovered	60%
	Material	Packaging Targets 2011 ²³⁸																
Cardboard	60%																	
Plastic	22.5%																	
Metals	50%																	
Glass	60%																	
Wood	15%																	
Overall recycling target	55%																	
Overall recovered	60%																	
Uses acceptable for recycling performance targets	No specific references to acceptable forms of recycling were identified. Facilities exist in Ireland to manufacture container glass and fibreglass from recycled glass. Mills for ferrous and non-ferrous exist in Ireland but some metals are is exported. Papers are used within Ireland for the manufacture of cardboard and paperboard and exported for the																	

²³⁷ European Commission - European Packaging Waste Management Systems Main Report, February 2001

²³⁸ Review of the Producer Responsibility Initiative Model in Ireland – Annex to the Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, May 2013

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
		<p>manufacture of other grades of paper. Plastics are both used within Ireland and exported.</p> <p>The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities.²³⁹</p>
	Geographic restrictions re processing or use	Repak undertakes third party audits for processing facilities and markets outside of the European Union to demonstrate that they are operating to European Union environmental standards. ²⁴⁰
	Requirements re collection and management systems that pre-dated EPR regulation	Minimal as the estimated recovery of packaging prior to the regulations was 15%. ²⁴¹
	Penalties for non-compliance	Non-compliance with the Packaging Regulations is liable on summary conviction to a fine not exceeding €3,000 and/or imprisonment of up to 12 months or on conviction on indictment to a fine not exceeding €15,000,000 and/or imprisonment for up to 10 years. ²⁴²
EPR Oversight	By whom	Each local authority is responsible for the enforcement of the Regulations within their functional area. ²⁴³ A local authority may, by notice in writing, require a producer to furnish, within a specified period of not less than six weeks, a packaging report for a specified period, information

²³⁹ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

²⁴⁰ The Bottom Line – 2014 Annual Report: Repak

²⁴¹ European Commission - European Packaging Waste Management Systems Main Report, February 2001

²⁴² Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

²⁴³ Local authority functional area means the geographic area administered by the local authority that had the responsibility for issuing waste collection permits. There are 34 local authorities in the State and 10 have responsibility for issuing waste collection permits.

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
		regarding the use, type, quantity, origin and destination of the packaging, steps taken in order to comply with any requirement of the Regulations, and the results of those steps. ²⁴⁴
	Size of oversight body (e.g. budget, staff)	<p>A total of 120 local authority staff are dedicated to enforcement for all producer responsibility programs and other waste enforcement activities. For example, local authorities are also responsible for the permitting of recycling and recovery facilities located within their administrative area along with the permitting of the collection and transportation of recycled and recovered waste.</p> <p>In 2011, local authorities carried out 1,187 inspections associated with packaging. This compares to 3,104 inspections in 2007, 2,034 inspections in 2008, 2,244 inspections in 2009 and 813 inspections in 2010. The decrease in inspections likely reflects a reduction in local authority income.²⁴⁵</p>
	Degree of producer compliance (i.e. free riders)	<p>Repak had 2,178 members in 2012 in their compliance scheme which represents 62% of the packaging put on the market by volume and accounting for 45% to 47% of the total estimated number of obligated producers. However, in 2011 Repak members accounted for 95% of the compliant obligated producers (Repak members and selfcompliers).²⁴⁶</p> <p>Repak has an obligation to notify local authorities of organisations joining or leaving the scheme and can provide information on non-compliant businesses to local authorities.</p> <p>The 2014 Review of the Producer Responsibility Initiative in Ireland noted that there is a significant number of obligated producers who are not compliant with the Packaging Regulations.²⁴⁷ Repak estimates that, in 2014, 3,000 businesses that are obligated under the Regulations were neither members of Repak nor self-compliers.²⁴⁸</p>

²⁴⁴ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

²⁴⁵ Ibid.

²⁴⁶ Ibid.

²⁴⁷ Ibid.

²⁴⁸ The Bottom Line – Annual Report 2014: Repak

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description									
		Repak has been highlighting for many years that the lack of enforcement is a significant issue for its members. If increased enforcement was to bring more companies to participate in the compliance scheme, this could result in an increase in the PRO income and/or a potential decrease in fees paid by existing scheme members. ²⁴⁹									
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	Repak's 2014 annual report does not comment on producer reporting inaccuracies but it describes the introduction of a fee rebate program where members can receive a 5% rebate if packaging statistics are submitted by the required date together with payment of the invoice by the due date. ²⁵⁰ The introduction of a rebate program suggests that producers were not adhering to reporting and payment deadlines.									
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	Repak members represent 62% of the packaging supplied in Ireland. However, according to Repak the packaging claimed to be recovered by self-compliers (who supply 5% of the packaging in Ireland) may include packaging which is also claimed by a waste operator under the Repak Payment Scheme. Repak conducts audit to mitigate the risk of double-counting, but lack of visibility on the arrangements between self-compliers and waste operators may limit the effectiveness of these audits. ²⁵¹									
	Degree of compliance with service requirements	<table border="1"> <thead> <tr> <th></th><th>Required in Repak Agreement</th><th>Repak Collections²⁵²</th></tr> </thead> <tbody> <tr> <td>% of packaging target from households</td><td>20%</td><td>36%</td></tr> <tr> <td>% of packaging target from ICI</td><td>80%</td><td>64%</td></tr> </tbody> </table>		Required in Repak Agreement	Repak Collections ²⁵²	% of packaging target from households	20%	36%	% of packaging target from ICI	80%	64%
	Required in Repak Agreement	Repak Collections ²⁵²									
% of packaging target from households	20%	36%									
% of packaging target from ICI	80%	64%									
	Degree of compliance with performance requirements	Repak is exceeding the national packaging recovery target.									
	Use of penalties	According to Repak, there have been about 50 convictions under the Packaging Waste Regulations by 8 local authorities between 1997 and 2010 with the maximum fine being €15,000.									

²⁴⁹ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

²⁵⁰ The Bottom Line – 2014 Annual Report: Repak

²⁵¹ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

²⁵² The Bottom Line – 2014 Annual Report: Repak

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
		Dublin City Council accounts for 64% of the prosecutions. Most of the prosecutions have taken place before 2003. ²⁵³
Competition	Forms of competition within a regulated product category	Competition among private companies to provide collection services to local authorities and ICI customers.
	Forms of competition between stewardship programs or producers in the same product category	Repak is the only PRO. However, Repak is held accountable through its approval for the national packaging recovery targets while self-compliers are not held accountable to contribute to this target.
	Forms of competition in procuring and delivering collection services	<p>Waste collection service is an open market in Ireland. Waste collectors only need to apply for and be granted a waste collection permit to be able to provide the services. Since February 2012, the responsibility for issuing most waste collection permits rests with the National Waste Collection Permit Office (NWPCO).²⁵⁴</p> <p>Local authorities are exiting the household waste collection market. In 2008, 15 local authorities were collecting waste curbside, in 2010 this dropped to 13 local authorities and by the start of 2012 there were only three local authorities collecting household waste curbside. Of the total household waste collected at curbside, 78% was collected by the private sector in 2011 (65% in 2010) and 22% by local authorities (35% in 2010).²⁵⁵</p>
	Forms of competition in procuring and delivering post-collection services	Competition among private companies to provide collection services to local authorities and ICI customers.

²⁵³ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

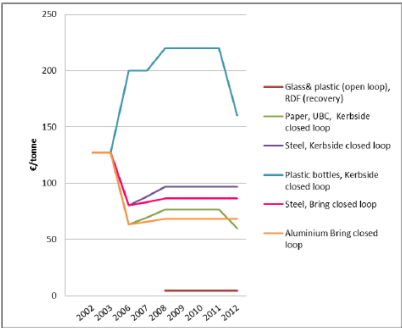
²⁵⁴ <http://www.nwcpo.ie/>

²⁵⁵ National Waste Report for 2011: Environmental Protection Agency

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
to Com mon Infras	Requirements of the jurisdiction's competition laws	<p>In 2014, the Competition and Consumer Protection Act came into effect in Ireland. The Act called for the establishment of a body to act as the Competition and Consumer Protection Commission to administer the legislation. The new Act amended the Competition Act 2002 and the Consumer Protection Act along with a number of other federal statutes.</p> <p>Prior to the 2014 reforms Irish competition law was set out in the Competition Act of 2002 which was modeled on European Community competition law. The competition rules contained in section 4 and section 5 of the Competition Act, 2002 are based on Article 101 and Article 102 of TEFU.</p> <p>Section 4 prohibits anti-competitive arrangements between undertakings which have as their object or effect the prevention, restriction or distortion of competition in trade in any goods or services in Ireland or in any part of Ireland unless certain efficiency conditions are satisfied or an arrangement satisfies any applicable Irish Competition Authority declaration or notice currently in force.</p> <p>Section 5 prohibits any abuse by one or more undertakings of a dominant position in trade for any goods or services in Ireland or in any part of Ireland.</p>
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	No
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	Given that Ireland is an island (shared with Northern Ireland), the extra-jurisdictional competitive dynamic includes competition for export markets and companies based outside of Ireland establishing operations within Ireland. The list of Repak's service providers does not include major international waste and recycling companies, although Repak's service may be wholly or partially owned subsidiaries of international companies.
to Com mon Infras	Who operates infrastructure	Under the Waste Management Act local authorities are required to provide a waste collection service for household waste. Predominately, local authorities contract with private companies to provide curbside and/or depot collection services.

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
	Arrangements between PROs and infrastructure operators	<p>Repak pays subsidies to registered service providers. Service providers consist of local authorities and waste management companies that own and control their services to collect and recycle packaging waste from households and the commercial sector.²⁵⁶</p> <p>Repak is contracting with 97 service providers. Of these 86 are private companies and 11 are local authorities. The private companies include collectors and processors. Repak began discussions with service provider representatives, the Irish Waste Management Association (IWMA) and individual operators in September 2014 to formalise a new contract to extend until December 2018. Under this new contract, there is a greater level of transparency on the operation of service providers so that Repak can build an accurate database upon which subsidy levels can be determined. A phased subsidy reduction plan has been implemented as part of an overall cost review.²⁵⁷</p> <p>Repak's subsidy for household packaging increased sharply in 2002 with a subsidy of €127/tonne to support the introduction of kerbside collection in Ireland.²⁵⁸</p>  <p><small>*Does not include subsidies for all materials by collection method</small></p> <p>Figure 7.16: Household Waste Packaging Material Recycled Subsidy Rate 2001-2012²</p>

²⁵⁶ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

²⁵⁷ The Bottom Line – 2014 Annual Report: Repak

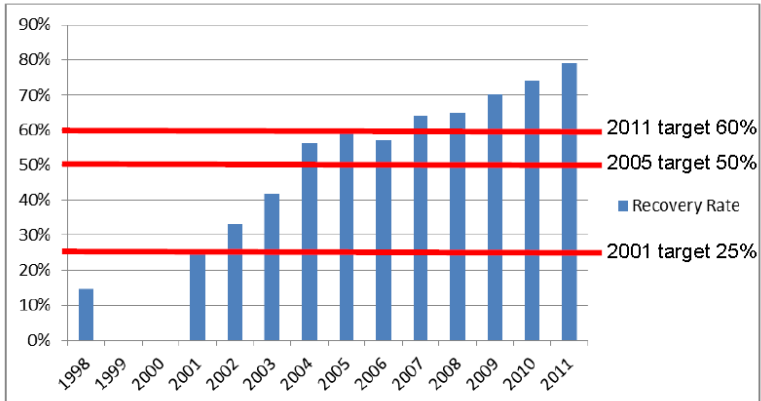
²⁵⁸ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
		<p>Repak's payments for ICI (known as backdoor) packaging waste have decreased in recent years.²⁵⁹</p> <p>Figure 7.17: Backdoor Waste Packaging Material Recycled Subsidy Rate 2001-2012</p>
	Arrangements among PROs	Not applicable.
	Role of government	None.
	Role of another party (e.g. clearinghouse)	None.

²⁵⁹ Ibid.

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description																								
Outcomes	Have environment public policy objectives been met	<p>Ireland has exceeded the national packaging target.</p>  <table><tr><th>Material</th><th>Packaging Targets 2011²⁶⁰</th><th>Packaging Recycled in 2011²⁶¹</th></tr><tr><td>Cardboard</td><td>60%</td><td>92%</td></tr><tr><td>Plastic</td><td>22.5%</td><td>48%</td></tr><tr><td>Metals</td><td>50%</td><td>67%</td></tr><tr><td>Glass</td><td>60%</td><td>81%</td></tr><tr><td>Wood</td><td>15%</td><td>93%</td></tr><tr><td>Overall recycling target</td><td>55%</td><td>71%</td></tr><tr><td>Overall recovered</td><td>60%</td><td></td></tr></table>	Material	Packaging Targets 2011 ²⁶⁰	Packaging Recycled in 2011 ²⁶¹	Cardboard	60%	92%	Plastic	22.5%	48%	Metals	50%	67%	Glass	60%	81%	Wood	15%	93%	Overall recycling target	55%	71%	Overall recovered	60%	
		Material	Packaging Targets 2011 ²⁶⁰	Packaging Recycled in 2011 ²⁶¹																						
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Overall recovered	60%																									
<p>The EPA National Waste Report for 2011 indicates that the performance of self-compliers in achieving the Packaging Directive recovery targets was poor with 25% recovery in 2009, 44% recovery in 2010 and 36% recovery in 2011. In 2011, 139 self-compliers (representing 106</p>																										

²⁶⁰ Ibid.

²⁶¹ Ibid.

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description
		<p>unique producers) put 57,462 tonnes of packaging on the market and recovered 20,423 tonnes of packaging waste (35.5%).²⁶² The EPA also reported that a number of self-compliers failed to report packaging recovery data. As such, Repak and its members are largely responsible for the achievement of the national targets for packaging.²⁶³</p> <p>Repak reports that overall recovery for 2014, based on best available information from the EPA, will yield a recovery rate of about 95%, well ahead of the target of 75%. Similarly, overall recycling performance will come in at 71% (allowing a 2.5% contribution from self-compliers), ahead of the target of 65%.²⁶⁴</p> <p>The EPA reports that 98% of households were receiving 2 bin collection service (recycling and waste) in 2011. In addition, 113 civic amenity sites (similar to transfer stations) and 1,891 bring banks (often using igloo depots) were in operation in 2011.</p>
	Economic outcomes	<p>€20.279 M was expended by Repak on recovery and recycling activity in 2014. The cost to producers who are members of Repak was €35.6 per tonne in 2012, a decrease of €10 per tonne since 2010. By comparison, costs for large self-compliers are estimated at approximately €20 per tonne and costs for small self-compliers are estimated at approximately €137 per tonne.²⁶⁵</p>

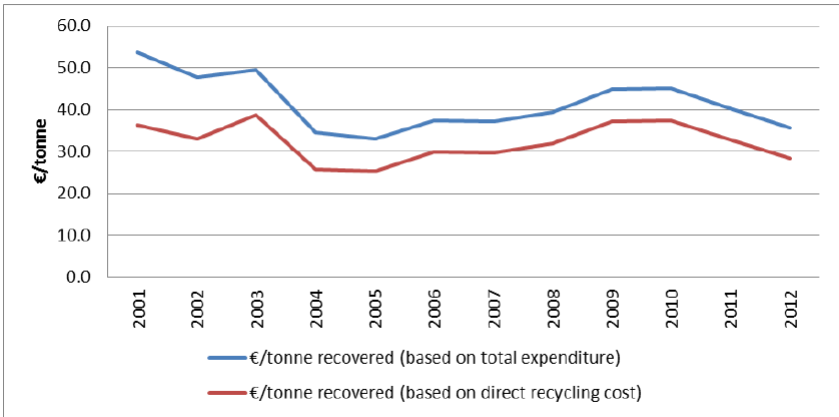
²⁶² Ibid,

²⁶³ Ibid.

²⁶⁴ The Bottom Line – 2014 Annual Report: Repak

²⁶⁵ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description																																																																		
		<div><table border="1"><caption>Estimated data for €/tonne recovered</caption><thead><tr><th>Year</th><th>€/tonne recovered (based on total expenditure)</th><th>€/tonne recovered (based on direct recycling cost)</th></tr></thead><tbody><tr><td>2001</td><td>53.0</td><td>36.0</td></tr><tr><td>2002</td><td>48.0</td><td>33.0</td></tr><tr><td>2003</td><td>49.0</td><td>38.0</td></tr><tr><td>2004</td><td>35.0</td><td>26.0</td></tr><tr><td>2005</td><td>33.0</td><td>25.0</td></tr><tr><td>2006</td><td>37.0</td><td>30.0</td></tr><tr><td>2007</td><td>37.0</td><td>30.0</td></tr><tr><td>2008</td><td>39.0</td><td>32.0</td></tr><tr><td>2009</td><td>45.0</td><td>37.0</td></tr><tr><td>2010</td><td>45.0</td><td>37.0</td></tr><tr><td>2011</td><td>40.0</td><td>32.0</td></tr><tr><td>2012</td><td>35.0</td><td>28.0</td></tr></tbody></table></div> <p>In 2014, Repak charged its members who are brand holders the following material-specific fee rates²⁶⁶ Repak also charges participation fees: €205 per tonne for manufacturers, convertors and distributors and €410 per tonne for retailers.</p> <table border="1"><thead><tr><th colspan="7">PRO Fees as of January 1, 2014 € per tonne excluding VAT</th></tr><tr><th>Paper</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics</th><th>Composites²⁶⁷</th><th>Wood</th></tr></thead><tbody><tr><td>22.73</td><td>9.18</td><td>78.51</td><td>83.62</td><td>89.16</td><td>75.78</td><td rowspan="2">16.00</td></tr><tr><td></td><td></td><td></td><td></td><td></td><td>111.48</td></tr></tbody></table> <p>Repak members represent 62% of the packaging supplied in Ireland.²⁶⁸ However, according to Repak the packaging claimed to be recovered by self-compliers (who supply 5% of the</p>	Year	€/tonne recovered (based on total expenditure)	€/tonne recovered (based on direct recycling cost)	2001	53.0	36.0	2002	48.0	33.0	2003	49.0	38.0	2004	35.0	26.0	2005	33.0	25.0	2006	37.0	30.0	2007	37.0	30.0	2008	39.0	32.0	2009	45.0	37.0	2010	45.0	37.0	2011	40.0	32.0	2012	35.0	28.0	PRO Fees as of January 1, 2014 € per tonne excluding VAT							Paper	Glass	Steel	Aluminum	Plastics	Composites ²⁶⁷	Wood	22.73	9.18	78.51	83.62	89.16	75.78	16.00						111.48
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²⁶⁶ Participation Costs Overview 2014: Pro Europe, April 2014

²⁶⁷ Where more than one fee is listed for a material, the PRO has used sub-categories with different fee rates.

²⁶⁸ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

Appendix G Ireland Jurisdictional Scan

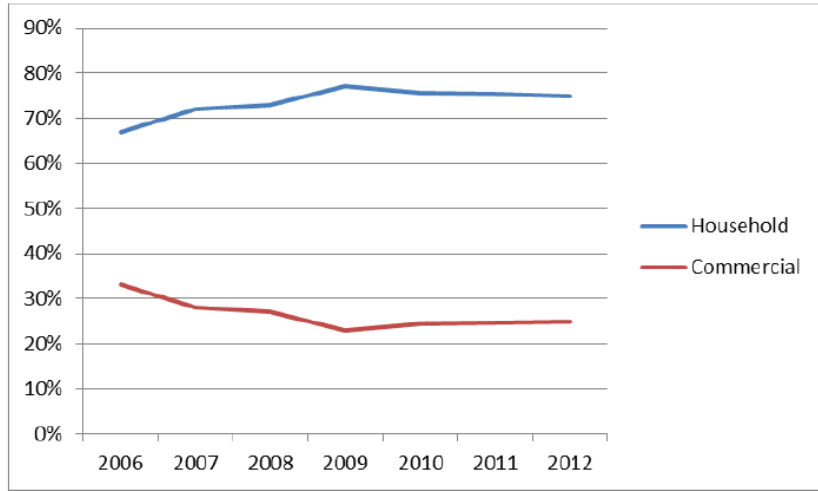
Topic	Element	Description
		<p>packaging in Ireland) may include packaging which is also claimed by a waste operator under the Repak Payment Scheme. Repak conducts audit to mitigate the risk of double-counting, but lack of visibility on the arrangements between self-compliers and waste operators may limit the effectiveness of these audits.²⁶⁹</p> <p>The remaining 33% of packaging supplied in Ireland is either below the de minimis threshold or is non-compliant.</p> <p>Household waste is the largest share of Repak's direct recycling costs. The quantities of household packaging waste recovered by Repak in 2012 accounted for 36% (242,559 tonnes) of total packaging waste recovered and 75% (€14.2 million) of the total direct recycling expenditure. In 2012, the average support provided by Repak to household packaging waste recovery was €58.50/tonne. By comparison, the quantities of commercial packaging waste recovered accounted for 64% (425,802 tonnes) of total packaging waste recovered and 25% (€4.6 million) of direct recycling expenditure. In 2012, the average support provided by Repak to commercial packaging waste recovery was €11/tonne.²⁷⁰</p> <p>In 2011, 139 self-compliers (representing 106 unique producers) put 57,462 tonnes of packaging on the market and recovered 20,423 tonnes of packaging waste (35.5%).²⁷¹</p>

²⁶⁹ The Bottom Line – 2014 Annual Report: Repak

²⁷⁰ Review of the Producer Responsibility Initiative Model in Ireland – Main Report: Paul K Gorecki, Economic and Social Research Institute and Department of Economics, Trinity College Dublin, July 2014

²⁷¹ Ibid.

Appendix G Ireland Jurisdictional Scan

Topic	Element	Description																								
		 <table><caption>Packaging Recovery Rates (2006-2012)</caption><thead><tr><th>Year</th><th>Household (%)</th><th>Commercial (%)</th></tr></thead><tbody><tr><td>2006</td><td>68</td><td>33</td></tr><tr><td>2007</td><td>72</td><td>28</td></tr><tr><td>2008</td><td>73</td><td>27</td></tr><tr><td>2009</td><td>78</td><td>23</td></tr><tr><td>2010</td><td>76</td><td>24</td></tr><tr><td>2011</td><td>76</td><td>24</td></tr><tr><td>2012</td><td>75</td><td>25</td></tr></tbody></table>	Year	Household (%)	Commercial (%)	2006	68	33	2007	72	28	2008	73	27	2009	78	23	2010	76	24	2011	76	24	2012	75	25
Year	Household (%)	Commercial (%)																								
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	Perceived effectiveness within jurisdiction	As Repak is exceeding the national packaging target, the system for packaging recovery is generally considered to be successful. However, there are numerous suggestions for improvements in accountability and oversight.																								
	Policy gaps and/or conflicts	Repak is held accountable through its approval for the national packaging recovery targets while self-compliers are not held accountable to contribute to this target.																								
	Are changes being considered	Recommendations in a 2014 review of the producer responsibility initiative in Ireland included: <ul style="list-style-type: none">• dedicated PRI enforcement units be established to facilitate the concentration of specialised expertise at national or regional levels;• development of a national, centralised electronic registration system for obligated producers;• proper allocation of targets to producer self-compliers and PROs;• setting up of a clear reporting system to monitor PRO and self-complier performance;• use of standard service level agreements with PROs; and• various mechanisms to improve enforcement of producers who choose to self-comply.²⁷²																								

²⁷² Ibid.

Appendix H Poland Jurisdictional Scan

Topic	Element	Description
Background	Jurisdiction	Poland ²⁷³
	Size	Geographical size: 312,679 km ² Population: 38,495,659 (2014) GDP: €389,695 billion (2013) ²⁷⁴
	Title of relevant legislation and/or regulation	Packaging and Packaging Waste, May 11, 2001 (amended in 2012)
	Responsible government department	Ministry of Environment
	Designated material	Packaging waste to align with the EU Packaging Directive
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	Reportedly, more than 40 PROs for packaging are registered in Poland but not all are active. The following chart illustrates the relative market share. ²⁷⁵ The following PROs appear to be the four largest: <ul style="list-style-type: none"> • Rekopol Recovery Organisation S.A. (founded in 2001) • Branzowa Organization S.A. • Polish Recycling System • Biosystem

²⁷³ Poland joined the EU on January 1, 2004.

²⁷⁴ <http://www.wikiwasteschemes.com/>

²⁷⁵ EPR Schemes in Poland: Jean-Michel Kaleta, SITA Polska, May 2013

Appendix H Poland Jurisdictional Scan

Topic	Element	Description																																																						
		<p>Main recovery and recycling organizations in Poland</p> <table><thead><tr><th>Organization</th><th>Market Share (%)</th></tr></thead><tbody><tr><td>Rekopol</td><td>25.5%</td></tr><tr><td>Branzowa</td><td>12.6%</td></tr><tr><td>PSR</td><td>11.9%</td></tr><tr><td>Biosystem</td><td>9.6%</td></tr><tr><td>Eko Cykl</td><td>5.5%</td></tr><tr><td>Eko-punkt</td><td>5.5%</td></tr><tr><td>Stolica</td><td>4.4%</td></tr><tr><td>Interseroh</td><td>3.1%</td></tr><tr><td>Koba</td><td>2.9%</td></tr><tr><td>Eurobac</td><td>2.7%</td></tr><tr><td>DOL-EKO</td><td>2.1%</td></tr><tr><td>Drop</td><td>2.1%</td></tr><tr><td>Vfw REPACK</td><td>1.5%</td></tr><tr><td>SULD</td><td>1.5%</td></tr><tr><td>Rebis</td><td>1.1%</td></tr><tr><td>Lobis</td><td>0.8%</td></tr><tr><td>ReEko</td><td>0.8%</td></tr><tr><td>Recan</td><td>0.5%</td></tr><tr><td>Energiea</td><td>0.5%</td></tr><tr><td>Auraeko</td><td>0.4%</td></tr><tr><td>Zielony Punkt</td><td>0.4%</td></tr><tr><td>OTrzy</td><td>0.1%</td></tr><tr><td>Globb Kon-Mit</td><td>0.1%</td></tr><tr><td>Total-Eko</td><td>0.1%</td></tr><tr><td>Others</td><td>0.08%</td></tr><tr><td>Others</td><td>0.05%</td></tr></tbody></table>	Organization	Market Share (%)	Rekopol	25.5%	Branzowa	12.6%	PSR	11.9%	Biosystem	9.6%	Eko Cykl	5.5%	Eko-punkt	5.5%	Stolica	4.4%	Interseroh	3.1%	Koba	2.9%	Eurobac	2.7%	DOL-EKO	2.1%	Drop	2.1%	Vfw REPACK	1.5%	SULD	1.5%	Rebis	1.1%	Lobis	0.8%	ReEko	0.8%	Recan	0.5%	Energiea	0.5%	Auraeko	0.4%	Zielony Punkt	0.4%	OTrzy	0.1%	Globb Kon-Mit	0.1%	Total-Eko	0.1%	Others	0.08%	Others	0.05%
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EPR Regulatory Requirements	<p>Where a single PRO is required to be established</p> <ul style="list-style-type: none">- rationale for affording a monopoly- regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded	<p>Poland does not require a single PRO to be established.</p>																																																						

Appendix H Poland Jurisdictional Scan

Topic	Element	Description
	<p>monopoly power)</p> <ul style="list-style-type: none"> - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>Producers placing packaged products on the market are obligated to achieve recovery and recycling targets for packaging waste. The producers may act individually to meet their obligation or they can do so through a PRO.²⁷⁶</p> <p>PROs must submit annual reports to the Marshall Office (at the voivodship level of government²⁷⁷) that include qualitative and quantitative information on the quantity of packaging supplied, packaging waste managed through recovery and recycling processes, the recovery and recycling levels achieved, and the product fees levied.</p> <p>Recovery organisations must spend at least 5% of their fee income on public communications campaigns in order to be approved.²⁷⁸</p>
	<p>Who is liable (individual producer or PRO)</p>	<p>Manufacturers, packers/fillers and importers of packaged goods are responsible for meeting the recovery and recycling targets. They can fulfil their obligations individually (self-compliers) or by appointing a PRO that will perform the recovery and recycling activities for packaging waste on their behalf.</p> <p>A producer complying individually must submit annual reports to the Marshall Office (at the voivodship level of government²⁷⁹) that include qualitative and quantitative information on the quantity of packaging supplied, packaging waste managed through recovery and recycling processes, the recovery and recycling levels achieved, and the product fees levied.</p>

²⁷⁶ The National Waste Management Plan 2014: July 30, 2010

²⁷⁷ Highest-level administrative subdivision of Poland, corresponding to a province in many other countries

²⁷⁸ <http://www.wikiwasteschemes.com/>

²⁷⁹ Highest-level administrative subdivision of Poland, corresponding to a province in many other countries

Appendix H Poland Jurisdictional Scan

Topic	Element	Description									
		<p>Producers are prohibited from using a PRO to meet recovery requirements if the business markets products in mixed-material packaging or hazardous substances in packaging. Such entities must operate their own system for collection and recovery of this packaging, or through an industry self-regulatory group, in agreement with the marshal of the province.²⁸⁰</p> <p>Businesses marketing products in packaging are obligated to finance public education campaigns in an amount equal to at least 2% of the net value of the packaging introduced onto the market in the preceding calendar year. A business may be released from this obligation by paying the same amount to the account of the National Fund of Environmental Protection and Water Management.²⁸¹</p>									
	Scope of sectoral service requirements (residential and/or ICI)	To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.									
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	Nation-wide coverage but no specific requirements for level of service.									
	Scope and nature of collection performance targets	None									
	Scope and nature of recycling performance targets	<div><p>The Ministry of Environment had published recycling targets that increased year-over-year.²⁸²</p><table><tr><th>Material</th><th>Paper, metal, plastic, glass</th></tr><tr><td>2012</td><td>10%</td></tr><tr><td>2013</td><td>12%</td></tr><tr><td>2014</td><td>14%</td></tr><tr><td>2015</td><td>16%</td></tr></table></div>	Material	Paper, metal, plastic, glass	2012	10%	2013	12%	2014	14%	2015
Material	Paper, metal, plastic, glass										
2012	10%										
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2015	16%										

²⁸⁰ Poland: New rules on management of packaging and packaging waste: Błażej Grochowski, Lawyer, February 2014

²⁸¹ Ibid.

²⁸² Waste Management in Central and Eastern Europe: CMS Cameron McKenna LLP, 2013

Appendix H Poland Jurisdictional Scan

Topic	Element	Description																											
		<table><tr><th>Material</th><th>Paper, metal, plastic, glass</th></tr><tr><td>2016</td><td>18%</td></tr><tr><td>2017</td><td>20%</td></tr><tr><td>2018</td><td>30%</td></tr><tr><td>2019</td><td>40%</td></tr><tr><td>2020</td><td>50%</td></tr></table>	Material	Paper, metal, plastic, glass	2016	18%	2017	20%	2018	30%	2019	40%	2020	50%															
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		<p>Poland, as an accession country, was granted a transition period until 2014 to reach the EU recycling and recovery targets.²⁸³ Poland updated its recovery and recycling targets as part of its 2009-2012 National Environmental Policy to recover 60% and recycle 55% of packaging waste by December 31, 2014, at a minimum.²⁸⁴</p> <p>Table 3.3. Target recycling levels for 2014.</p> <table><tr><th rowspan="2">Types of packaging</th><th colspan="2">2014</th></tr><tr><th>Recovery (%)</th><th>Recycling (%)</th></tr><tr><td>Packaging in total</td><td>60</td><td>Not less than 55 and not more than 80</td></tr><tr><td>Plastic packaging</td><td>-</td><td>22.5</td></tr><tr><td>Aluminium packaging</td><td>-</td><td>50</td></tr><tr><td>White sheet metal packaging</td><td>-</td><td>50</td></tr><tr><td>Cardboard and paper packaging</td><td>-</td><td>60</td></tr><tr><td>Industrial glass packaging</td><td>-</td><td>60</td></tr><tr><td>Natural material packaging (wood and textile)</td><td>-</td><td>15</td></tr></table>		Types of packaging	2014		Recovery (%)	Recycling (%)	Packaging in total	60	Not less than 55 and not more than 80	Plastic packaging	-	22.5	Aluminium packaging	-	50	White sheet metal packaging	-	50	Cardboard and paper packaging	-	60	Industrial glass packaging	-	60	Natural material packaging (wood and textile)	-	15
Types of packaging	2014																												
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Packaging in total	60	Not less than 55 and not more than 80																											
Plastic packaging	-	22.5																											
Aluminium packaging	-	50																											
White sheet metal packaging	-	50																											
Cardboard and paper packaging	-	60																											
Industrial glass packaging	-	60																											
Natural material packaging (wood and textile)	-	15																											

²⁸³ Consumer Packaging in Poland, Czech Republic and in Moscow Area: Jari Makkonen, Jaroslava Habstová, Josef Král, Ewa Kicinska, 2007

²⁸⁴ National Waste Management Review – Estonia, Latvia, Lithuania, Poland: RECO Baltic 21 Tech project, 2012

Appendix H Poland Jurisdictional Scan

Topic	Element	Description
	Uses acceptable for recycling performance targets	<p>No specific references to acceptable forms of recycling were identified.</p> <p>The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities.²⁸⁵</p>
	Geographic restrictions re processing or use	None specified
	Requirements re collection and management systems that pre-dated EPR regulation	None
	Penalties for non-compliance	<p>A system of product charges apply if a business fails to achieve the required recovery and recycling rates for packaging waste. These charges are calculated based on the difference between the required recovery or recycling rate and the rate actually achieved and are paid to the Marshall Office.²⁸⁶</p> <p>The product charge is <i>de facto</i> a penalty imposed on the operators placing packaging on the market for failing to comply with their statutory commitments. The product charges received by the Marshall Office are distributed to the Funds for Environmental Protection and Water Management²⁸⁷ which then distribute a portion of the funds to municipalities to support separate collection of packaging waste.²⁸⁸</p>

²⁸⁵ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

²⁸⁶ European Commission Country Factsheet for Poland, 2011

²⁸⁷ The National Waste Management Plan 2014: July 30, 2010

²⁸⁸ Consumer Packaging in Poland, Czech Republic and in Moscow Area: Jari Makkonen, Jaroslava Habstová, Josef Král, Ewa Kicinska, 2007

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Topic	Element	Description
EPR Oversight	By whom	The Chief Inspectorate for Environmental Protection is not part of the Ministry of Environment but operates under the Ministry's supervision. The Chief Inspectorate bundles responsibilities for enforcing waste legislation and coordinates inspections at voivodship level of government ²⁸⁹ giving instructions to the voivodship inspectorates about the setting of inspection plans; providing general guidance for realizing inspections; providing particular guidance on the priority inspections issues. For this purpose an additional specific guidance was issued focusing on 1) inspection of landfills and 2) inspection of glass packaging waste. ²⁹⁰
	Size of oversight body (e.g. budget, staff)	<p>The Chief Inspectorate of Environmental Protection is a central governmental authority with 150 staff. Compliance with regulations on packages and packages waste is one of many areas of responsibility.</p> <p>Tasks related to inspections are carried out through the 16 Voivodship Inspectors for Environmental Protection.</p> <p>The Inspectorate was established in 1980 and, in all, employs approximately 2,500 people (720 inspectors, 300 involved in monitoring, 840 laboratory staff and 610 as management and administration staff).²⁹¹</p>
	Degree of producer compliance (i.e. free riders)	Reportedly, lack of enforcement of producer compliance is a recognized problem within Poland. The following graph compares the quantity of packaging supplied as reported to the government (red) against the estimated quantity of packaging actually supplied (purple). ²⁹²

²⁸⁹ Highest-level administrative subdivision of Poland, corresponding to a province in many other countries

²⁹⁰ European Commission Country Factsheet for Poland, 2011

²⁹¹ http://epanet.pbe.eea.europa.eu/european_epas/countries/pl

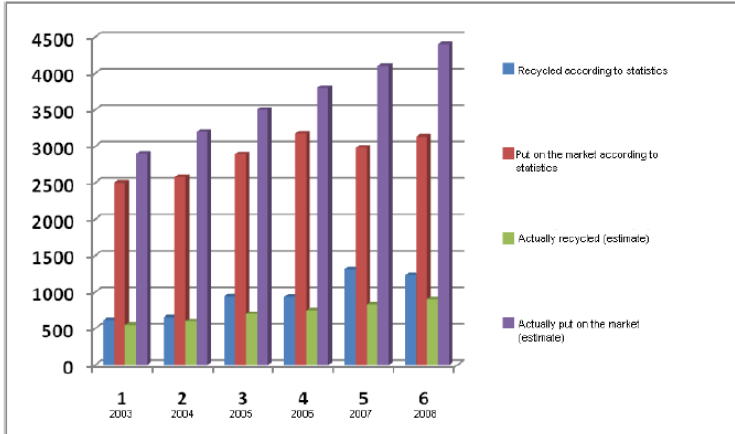
²⁹² EPR Schemes in Poland: Jean-Michel Kaleta, SITA Polska, May 2013

Appendix H Poland Jurisdictional Scan

Topic	Element	Description																																			
		<table><caption>Estimated data for Packaging in Poland (2003-2008)</caption><thead><tr><th>Year</th><th>Recycled according to statistics</th><th>Put on the market according to statistics</th><th>Actually recycled (estimate)</th><th>Actually put on the market (estimate)</th></tr></thead><tbody><tr><td>1 2003</td><td>700</td><td>2500</td><td>600</td><td>2900</td></tr><tr><td>2 2004</td><td>700</td><td>2600</td><td>650</td><td>3200</td></tr><tr><td>3 2005</td><td>1000</td><td>2900</td><td>750</td><td>3500</td></tr><tr><td>4 2006</td><td>1000</td><td>3200</td><td>800</td><td>3800</td></tr><tr><td>5 2007</td><td>1300</td><td>3000</td><td>900</td><td>4100</td></tr><tr><td>6 2008</td><td>1200</td><td>3100</td><td>950</td><td>4400</td></tr></tbody></table>	Year	Recycled according to statistics	Put on the market according to statistics	Actually recycled (estimate)	Actually put on the market (estimate)	1 2003	700	2500	600	2900	2 2004	700	2600	650	3200	3 2005	1000	2900	750	3500	4 2006	1000	3200	800	3800	5 2007	1300	3000	900	4100	6 2008	1200	3100	950	4400
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	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	<p>Reportedly, lack of enforcement of producer compliance is a recognized problem within Poland. The following graph compares the quantity of packaging supplied as reported to the government (red) against the estimated quantity of packaging actually supplied (purple).²⁹³</p> <table><caption>Estimated data for Packaging in Poland (2003-2008)</caption><thead><tr><th>Year</th><th>Recycled according to statistics</th><th>Put on the market according to statistics</th><th>Actually recycled (estimate)</th><th>Actually put on the market (estimate)</th></tr></thead><tbody><tr><td>1 2003</td><td>700</td><td>2500</td><td>600</td><td>2900</td></tr><tr><td>2 2004</td><td>700</td><td>2600</td><td>650</td><td>3200</td></tr><tr><td>3 2005</td><td>1000</td><td>2900</td><td>750</td><td>3500</td></tr><tr><td>4 2006</td><td>1000</td><td>3200</td><td>800</td><td>3800</td></tr><tr><td>5 2007</td><td>1300</td><td>3000</td><td>900</td><td>4100</td></tr><tr><td>6 2008</td><td>1200</td><td>3100</td><td>950</td><td>4400</td></tr></tbody></table>	Year	Recycled according to statistics	Put on the market according to statistics	Actually recycled (estimate)	Actually put on the market (estimate)	1 2003	700	2500	600	2900	2 2004	700	2600	650	3200	3 2005	1000	2900	750	3500	4 2006	1000	3200	800	3800	5 2007	1300	3000	900	4100	6 2008	1200	3100	950	4400
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²⁹³ Ibid.

Appendix H Poland Jurisdictional Scan

Topic	Element	Description																																			
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	<p>Reportedly, inaccurate data reported by PROs is a recognized problem within Poland. The following graph compares the quantity of packaging recycled as reported to the government (blue) against the estimated quantity of packaging actually recycled (green).²⁹⁴</p>  <p>The bar chart displays four data series over six years (2003-2008). The Y-axis represents quantity from 0 to 4500. The X-axis lists years 1 (2003) through 6 (2008). The series are: 'Recycled according to statistics' (blue), 'Put on the market according to statistics' (red), 'Actually recycled (estimate)' (green), and 'Actually put on the market (estimate)' (purple). Reported statistics (blue and red) are consistently lower than actual estimates (green and purple).</p> <table><caption>Estimated data from the bar chart</caption><thead><tr><th>Year</th><th>Recycled according to statistics</th><th>Put on the market according to statistics</th><th>Actually recycled (estimate)</th><th>Actually put on the market (estimate)</th></tr></thead><tbody><tr><td>1 (2003)</td><td>~700</td><td>~2500</td><td>~600</td><td>~2900</td></tr><tr><td>2 (2004)</td><td>~700</td><td>~2600</td><td>~650</td><td>~3200</td></tr><tr><td>3 (2005)</td><td>~1000</td><td>~2900</td><td>~750</td><td>~3500</td></tr><tr><td>4 (2006)</td><td>~1000</td><td>~3200</td><td>~800</td><td>~3800</td></tr><tr><td>5 (2007)</td><td>~1400</td><td>~3000</td><td>~900</td><td>~4100</td></tr><tr><td>6 (2008)</td><td>~1300</td><td>~3200</td><td>~950</td><td>~4400</td></tr></tbody></table> <p>PROs provide evidence of recovery and recycling to their members as 'receipts'. Reportedly, some quantities of packaging have been used to support more than one 'receipt', which has both contributed to the profitability of the PROs carrying out this fraudulent practice and driven down the price of the 'receipt'.²⁹⁵</p>	Year	Recycled according to statistics	Put on the market according to statistics	Actually recycled (estimate)	Actually put on the market (estimate)	1 (2003)	~700	~2500	~600	~2900	2 (2004)	~700	~2600	~650	~3200	3 (2005)	~1000	~2900	~750	~3500	4 (2006)	~1000	~3200	~800	~3800	5 (2007)	~1400	~3000	~900	~4100	6 (2008)	~1300	~3200	~950	~4400
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	Degree of compliance with service requirements	<p>PROs are obligated to meet recovery and recycling targets but this material can be sourced from either households or ICI sources. Reportedly, most PROs concentrate on ICI packaging and only Rekopol is investing in household collection, including communications to raise awareness among residents, with the result that only some municipalities have systems for separate collection of packaging waste.²⁹⁶ As of 2011, Rekopol was working with 1,069 municipalities representing 43% of municipalities.²⁹⁷</p>																																			

²⁹⁴ Ibid.

²⁹⁵ Consumer Packaging in Poland, Czech Republic and in Moscow Area: Jari Makkonen, Jaroslava Habstová, Josef Král, Ewa Kicinska, 2007

²⁹⁶ EPR for packaging in Europe - Learnings and best practices: Joachim Quoden, Managing Director of EXPRA

²⁹⁷ European Commission Country Factsheet for Poland, 2011

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Topic	Element	Description
	Degree of compliance with performance requirements	By 2012, Poland had achieved the recycling rates specified by the EU but was recycling considerably less than the average of EU member states. ²⁹⁸
	Use of penalties	In recent years, producers and importers of packaging have paid about 5 million PLN per year to the Marshall Office as product charges for missing their targets. ²⁹⁹
Competition	Forms of competition within a regulated product category	<p>PROs compete on the price of 'receipts' (evidence of recycling and recovery provided to their members).</p> <p>Private companies compete in response to tenders issued by municipalities and to provide collection of packaging from ICI sources.</p> <p>After many years of fragmentation, Poland's recycling and packaging waste recovery market is becoming more consolidated. Small players are merging with large ones and large players are starting to capitalize on the gradual disappearance of firms engaged in illegal practices with respect to waste utilization. Currently, as much as 85% of Poland's recycling and packaging waste recovery market is dominated by a handful of players. A few of the most notable ones are: Polski System Recyklingu (PSR), Rekopol, Ekopunkt, Biosystem and Brązowa Organizacja Odzysku.³⁰⁰</p>
	Forms of competition between stewardship programs or producers in the same product category	Competition between PROs has resulted in a significant decrease in fees charged by PROs to attract members, leaving the PROs with insufficient resources to support effective collection of packaging, in particular support for municipalities to deliver household collection of packaging. ³⁰¹

²⁹⁸ European Commission Country Factsheet for Poland, 2011

²⁹⁹ Consumer Packaging in Poland, Czech Republic and in Moscow Area: Jari Makkonen, Jaroslava Habstová, Josef Král, Ewa Kicinska, 2007

³⁰⁰ Waste Management in Poland: Switzerland Global Enterprise, 2014

³⁰¹ EPR Schemes in Poland: Jean-Michel Kaleta, SITA Polska, May 2013

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Topic	Element	Description
	Forms of competition in procuring and delivering collection services	Prior to mid-2013, citizens were the legal owners of waste and companies provided waste collection services (both for collection of waste for disposal and recycling) to individual residents with fees paid directly by each resident to the company the resident selected to provide services. As of July 1, 2013, municipalities became legally responsible for waste, residents must pay fees to municipalities to manage waste and municipalities must select companies to collect and manage household waste through public procurement. ³⁰² Municipalities with more than 10,000 residents can divide their area geographically and issue a separate tender for each area. A municipality can provide collection services directly only if it wins a public tender. ³⁰³ Generally, numerous companies compete to provide collection services to municipalities in urban areas but there is limited competition in rural areas.
	Forms of competition in procuring and delivering post-collection services	Private companies compete in response to tenders issued by municipalities and to provide collection and processing of packaging from ICI sources.
	Requirements of the jurisdiction's competition laws	<p>The Office of Competition and Consumer Protection (OCCP) is responsible for administering The Act On Competition and Consumer Protection (2002). This Act sets out various provisions dealing with restrictive trade practices, cartels, abuse of dominance and mergers.</p> <p>Significant amendments to the Act came into force on 18 January 2015. The reform introduced changes to the merger control regime and in the area of antimonopoly practices (anti-competitive agreements and abuse of a dominant position).</p>
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	No.
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	Major international waste management companies, such as Remondis, Sita and Veolia, are involved in collection and processing of packaging waste in Poland.

³⁰² Municipal Waste Management in Poland: European Environment Agency, Prepared by Christian Fischer, February 2013

³⁰³ OECD Policy Roundtables - Competition Committee: Waste Management Services, April 2014

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Topic	Element	Description
Approach to Common Infrastructure	Who operates infrastructure	<p>Municipalities are obligated to provide collection of waste, including separate collection of packaging waste.³⁰⁴</p> <p>Municipalities finance the provision of waste services through fees paid by residents, using one of three calculation methods. Each household is subject to a standard fee, which is then adjusted to reflect either:</p> <ul style="list-style-type: none"> • The number of people living in a household; • The number of square metres covered by the property; or • The number of cubic metres of water used by the household per month. <p>The standard charge is also affected by a declaration made by the householder regarding waste segregation. If a property owner declares that they have separated out recyclable materials then they pay considerably lower fees. In some municipalities, this could be as low as 50% of the usual charge. Only those who declare that they don't want to recycle pay full price. However, some householders declare that they recycle their waste while in reality they don't. Unfortunately, abusing the system is easy to get away with, especially since the new scheme is still in its early stages and is not yet stable. Monitoring recycling participation in order to crack down on such abuses of the system represents quite a challenging task.³⁰⁵</p>
	Arrangements between PROs and infrastructure operators	<p>PROs are obligated to meet recovery and recycling targets but this material can be sourced from either households or ICI sources. Reportedly, most PROs concentrate on ICI packaging and only Rekopol is investing in household collection, including communications to raise awareness among residents, with the result that only some municipalities have systems for separate collection of packaging waste.³⁰⁶ As of 2011, Rekopol was working with 1,069 municipalities representing 43% of municipalities.³⁰⁷</p> <p>PROs arrange to purchase evidence of the quantity of packaging waste recovered and recycled</p>

³⁰⁴ European Commission Country Factsheet for Poland, 2011

³⁰⁵ Municipal Waste Management in Poland: 2013

³⁰⁶ EPR for packaging in Europe - Learnings and best practices: Joachim Quoden, Managing Director of EXPRA

³⁰⁷ European Commission Country Factsheet for Poland, 2011

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Topic	Element	Description
		<p>from private companies and sell this evidence as 'receipts' to producers. As a failure to meet the required recovery and recycling targets results in a requirement to pay the product charge, the value of the 'receipts' is limited by the value of the product charge.³⁰⁸</p> <p>Existing EPR schemes</p> <p>Producers / Importers → Recycling fee → EPR Organisations („Recovery Organisations”) → Recycling fee → Industry & commercial waste → Inhabitants</p> <p>EPR Organisations → Recycling fee → Waste Management Companies → Flows to be recovered/recycled → Recyclers → Recovery/recycling Confirmation (DPO/DPR) → EPR Organisations</p> <p>309</p>
	Arrangements among PROs	None
	Role of government	None
	Role of another party (e.g. clearinghouse)	None
Outcomes	Have environment public policy objectives been met	In 2009, Poland scored the worst amongst 11 EU countries by only recycling 37% of packaging waste. ³¹⁰

³⁰⁸ Strength and Weakness of Municipal and Packaging Waste System in Poland, Integrated Waste Management - Volume I: Joanna Kulczycka, Agnieszka Generowicz and Zygmunt Kowalski (2011). Mr. Sunil Kumar (Ed.) ISBN: 978-953-307-469-6

³⁰⁹ EPR Schemes in Poland: Jean-Michel Kaleta, SITA Polska, May 2013

³¹⁰ Waste Management in Central and Eastern Europe: CMS Cameron McKenna LLP, 2013

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		<p>By 2012, Poland had achieved the recycling rates specified by the EU but was recycling considerably less than the average of EU member states.³¹¹</p> <table><tr><th colspan="11">Statistics on packaging waste [EUROSTAT 2012d]</th></tr><tr><th rowspan="2"></th><th colspan="2">Plastic packaging waste</th><th colspan="2">Paper packaging waste</th><th colspan="2">Metal packaging waste</th><th colspan="2">Glass packaging waste</th><th colspan="2">Total packaging waste</th></tr><tr><th>PL</th><th>EU</th><th>PL</th><th>EU</th><th>PL</th><th>EU</th><th>PL</th><th>EU</th><th>PL</th><th>EU</th></tr><tr><td>Total amount generated (in kt)</td><td>666</td><td>14,590</td><td>1,193</td><td>29,783</td><td>207</td><td>4,544</td><td>837</td><td>16,006</td><td>3,780</td><td>76,593</td></tr><tr><td>Total amount generated per capita (in kg)</td><td>17.5</td><td>29.2</td><td>31.3</td><td>59.5</td><td>5.4</td><td>9.1</td><td>21.9</td><td>32</td><td>99.1</td><td>153.1</td></tr><tr><td>Share of total packaging waste (in %)</td><td>17.6</td><td>19</td><td>31.6</td><td>38.9</td><td>5.5</td><td>5.9</td><td>22.1</td><td>20.9</td><td>100</td><td>100</td></tr><tr><td>Recycling rates (in %)</td><td>21.5</td><td>32.2</td><td>50.9</td><td>83.4</td><td>43.1</td><td>69.5</td><td>41.9</td><td>67.6</td><td>36.8</td><td>62.5</td></tr><tr><td>Recovery rates including incineration with energy recovery (in %)</td><td>39.2</td><td>59.7</td><td>56.8</td><td>90.7</td><td>43.1</td><td>69.9</td><td>41.9</td><td>67.6</td><td>50.3</td><td>81.1</td></tr><tr><td>Disposal rates (in %)</td><td>60.8</td><td>40.3</td><td>43.2</td><td>9.3</td><td>56.9</td><td>30.1</td><td>58.1</td><td>32.4</td><td>49.7</td><td>25.4</td></tr><tr><td>Fulfilment of target of the Packaging Directive on recycling</td><td>yes</td><td>n/a</td><td>yes</td><td>n/a</td><td>yes</td><td>n/a</td><td>yes</td><td>n/a</td><td>yes</td><td>n/a</td></tr></table>	Statistics on packaging waste [EUROSTAT 2012d]												Plastic packaging waste		Paper packaging waste		Metal packaging waste		Glass packaging waste		Total packaging waste		PL	EU	PL	EU	PL	EU	PL	EU	PL	EU	Total amount generated (in kt)	666	14,590	1,193	29,783	207	4,544	837	16,006	3,780	76,593	Total amount generated per capita (in kg)	17.5	29.2	31.3	59.5	5.4	9.1	21.9	32	99.1	153.1	Share of total packaging waste (in %)	17.6	19	31.6	38.9	5.5	5.9	22.1	20.9	100	100	Recycling rates (in %)	21.5	32.2	50.9	83.4	43.1	69.5	41.9	67.6	36.8	62.5	Recovery rates including incineration with energy recovery (in %)	39.2	59.7	56.8	90.7	43.1	69.9	41.9	67.6	50.3	81.1	Disposal rates (in %)	60.8	40.3	43.2	9.3	56.9	30.1	58.1	32.4	49.7	25.4	Fulfilment of target of the Packaging Directive on recycling	yes	n/a	yes	n/a	yes	n/a	yes	n/a	yes	n/a
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Fulfilment of target of the Packaging Directive on recycling	yes	n/a	yes	n/a	yes	n/a	yes	n/a	yes	n/a																																																																																																					
Economic outcomes	<p>Collection, recycling and recovery of packaging waste is intended to be financed through the fees paid by obligated businesses to the PROs and any product charges paid to the Marshall Office by those not achieving recovery and recycling targets.³¹²</p> <p>Businesses buy ‘receipts’ from PROs as evidence they have met their recovery and recycling targets. Reportedly, some quantities of packaging have been used to support more than one</p>																																																																																																														

³¹¹ European Commission Country Factsheet for Poland, 2011

³¹² The National Waste Management Plan 2014: July 30, 2010

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		<p>'receipt', which has both contributed to the profitability of the PROs carrying out this fraudulent practice and driven down the price of the 'receipt'.³¹³</p> <p>In recent years, producers and importers of packaging have paid about 60 million PLN per year to PROs and about 5 million PLN per year to the Marshall Office as product charges for missing their targets. This compares to an estimated cost of 300 million PLN to actually collect, recycle and recover the packaging waste.³¹⁴</p> <p>Product charges paid to the Marshall Office by producers that missed their targets are handled as follows:</p> <ul style="list-style-type: none">• Marshall Office keeps 2%, while 98% is transferred to the National Environmental Protection and Water Management Fund (NFOSiGW);• NFOSiGW keeps 30% of revenues, while 70% is transferred to Voivodship Environmental Protection and Water Management Funds (WFOSiGW);• WFOSiGW transfer all the resources to municipalities for separate collection of packaging proportionate to the quantity of packaging waste separately collected for recovery and recycling.³¹⁵ <p>In 2014, Recopol charged its members the following fee rates:³¹⁶</p> <table><tr><th colspan="7">PRO Fees as of January 1, 2014</th></tr><tr><th colspan="7">€ per tonne excluding VAT</th></tr><tr><th>Paper</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics</th><th>Composites</th><th>Wood</th></tr><tr><td>4.00</td><td>19.30</td><td>10.30</td><td>29.03</td><td>5.40</td><td>2.30</td><td>3.70</td></tr></table>	PRO Fees as of January 1, 2014							€ per tonne excluding VAT							Paper	Glass	Steel	Aluminum	Plastics	Composites	Wood	4.00	19.30	10.30	29.03	5.40	2.30	3.70
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³¹³ Consumer Packaging in Poland, Czech Republic and in Moscow Area: Jari Makkonen, Jaroslava Habstová, Josef Král, Ewa Kicinska, 2007

³¹⁴ Ibid.

³¹⁵ Strength and Weakness of Municipal and Packaging Waste System in Poland, Integrated Waste Management - Volume I: Joanna Kulczycka, Agnieszka Generowicz and Zygmunt Kowalski (2011). Mr. Sunil Kumar (Ed.) ISBN: 978-953-307-469-6

³¹⁶ Participation Costs Overview 2014: Pro Europe, April 2014

Appendix H Poland Jurisdictional Scan

Topic	Element	Description
	Perceived effectiveness within jurisdiction	<p>The PRO system has worked well to collect packaging waste from ICI.</p> <p>The system to collect packaging waste from households was not functioning well.³¹⁷ This led to much discussion within Poland and ultimately to substantial reform of the role of municipalities to collect waste, including separate collection of packaging waste, starting on July 1, 2013.</p>
	Policy gaps and/or conflicts	<p>The European Commission identified several shortcomings in the transposition of the EU Packaging Directive in a letter of formal notice sent to Poland on February 17, 2011. These relate to the prevention of packaging waste, the recovery and recycling targets for glass, the review of the existing regulations preventing the use of recycled packaging waste, illustrative criteria for the definition of packaging, and provisions concerning data to be included in the national database on packaging and waste packaging. In April 2011, Poland agreed to amend its domestic law. However, the Commission expressed concerns about the pace of the changes.³¹⁸</p>
	Are changes being considered	<p>The government is considering how to better monitor the packaging waste streams and the operation of the scheme as a whole, including establishing a national recycling register covering the businesses that supply products in packaging, PROs, and the companies responsible for recycling and recovery packaging waste.³¹⁹</p>

³¹⁷ Consumer Packaging in Poland, Czech Republic and in Moscow Area: Jari Makkonen, Jaroslava Habstová, Josef Král, Ewa Kicinska, 2007

³¹⁸ European Commission Press Release: Commission urges Poland to comply with EU waste legislation, October 27, 2011

³¹⁹ The National Waste Management Plan 2014: July 30, 2010

Appendix I Romania Jurisdictional Scan

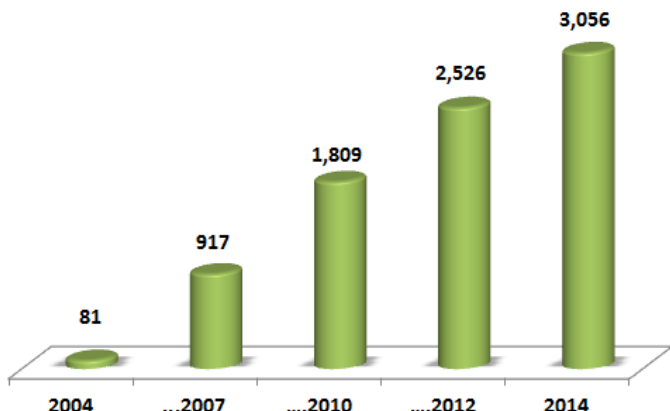
Topic	Element	Description
Background	Jurisdiction	Romania ³²⁰
	Size	Geographical size: 238 391 km ² Population: 19,942,642 (2014) GDP: €142,245 billion (2013) ³²¹
	Title of relevant legislation and/or regulation	Waste Framework Directive: Law 211/2011 Packaging Directive: GD 621/2005, amended in 2006 and 2011
	Responsible government department	Ministry of Environment and Climate Change (formerly Ministry of Environment and Forestry)
	Designated material	Packaging waste to align with the EU Packaging Directive
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	<p>There are 9 companies authorized to manage packaging waste:³²²</p> <ul style="list-style-type: none"> • Ecologic 3R SA • EcoPack Management SA • Ecopim Recycling SA • Eco-Rom Ambalaje SA • ECO-X SA • Intersemat SA • Respo Waste SA • RomPack Management SA • Sota Grup 21 SA <p>These companies are incorporated as for-profit organizations.</p> <p>Eco-Rom Ambalaje is the Green Dot company operating in Romania and has the largest market share of members supplying packaging waste. It was established in 2004 with the support of</p>

³²⁰ Romania joined the EU on January 1, 2007.

³²¹ <http://www.wikiwasteschemes.com/>

³²² Ibid.

Appendix I Romania Jurisdictional Scan

Topic	Element	Description												
		<p>multi-national companies including Pepsico, Heineken and Unilever. The following graph illustrates the increase in Eco-Rom’s members since it was established in 2004.³²³</p> <p>Numar clienti Eco-Rom Ambalaje</p>  <table><thead><tr><th>Year</th><th>Number of Clients</th></tr></thead><tbody><tr><td>2004</td><td>81</td></tr><tr><td>...2007</td><td>917</td></tr><tr><td>....2010</td><td>1,809</td></tr><tr><td>.....2012</td><td>2,526</td></tr><tr><td>2014</td><td>3,056</td></tr></tbody></table> <p>Intersemat was established in 2005 and had more than 500 clients in 2015.³²⁴</p>	Year	Number of Clients	2004	81	...2007	9172010	1,8092012	2,526	2014	3,056
Year	Number of Clients													
2004	81													
...2007	917													
....2010	1,809													
.....2012	2,526													
2014	3,056													
EPR Regulatory Requirements	<p>Where a single PRO is required to be established</p> <ul style="list-style-type: none">- rationale for affording a monopoly- regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power)- regulatory checks to ensure the	<p>Romania does not require a single PRO to be established.</p>												

³²³ <http://ecoromambalaje.ro/>

³²⁴ <http://www.thediplomat.ro/articol.php?id=5901>

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
	monopoly will strive for dynamic efficiencies in the absence of competition	
	Where multiple PROs can form <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>PROs must be authorized by the Ministry of Environment and Climate Change. The process and criteria for authorization is established conjunctly by the Minister of Environment and Waters Management, the Minister of Economy and Commerce and the Minister of Administration and Internal Affairs.³²⁵</p> <p>A PROs obligation for recovery and recycling will be based on the amounts of packaging supplied by its members. PROs must manage packaging waste in a manner that does not “obstruct the ways of commerce”.³²⁶</p>
	Who is liable (individual producer or PRO)	Producers placing packaged products into the market can act individually to collect the packaging waste supplied to market and resulting from their operations to achieve the regulated recovery and recycling targets or they can delegate responsibility to a PRO that is authorized by the Ministry of Environment and Climate Change. ³²⁷
	Scope of sectoral service requirements (residential and/or ICI)	To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	Municipalities are responsible for organizing household waste management as an integrated system and are obligated to collect paper, metal, plastic and glass packaging waste separately. Municipalities typically contract with private companies to provide collection and processing services. ³²⁸
	Scope and nature of collection performance targets	None specified
	Scope and nature of recycling performance targets	The Packaging Directive established annual targets for the period 2005 to 2013. ³²⁹

³²⁵ Packaging Directive: Law 211/2005

³²⁶ Ibid.

³²⁷ Romanian experience on packaging and packaging waste management and the European requirements under the Directive 94/62/EC: Simona Ghiță, Head of Waste Management Unit, Ministry of Environment and Forestry, September 2010

³²⁸ Ibid.

³²⁹ Amendment to Packaging Directive, 2006

Appendix I Romania Jurisdictional Scan

Topic	Element	Description																																																																																					
		<p>Table 11 – Gradual increase of the Romanian recycling and recovery targets. Source: EIMPack (2012c)</p> <table><tr><th rowspan="2">Year</th><th rowspan="2">Recycling objective (%)</th><th rowspan="2">Recovery objective (%)</th><th colspan="5">Recycling targets by material (%)</th></tr><tr><th>Paper/Cardboard</th><th>Plastic</th><th>Glass</th><th>Metals</th><th>Wood</th></tr><tr><td>2005</td><td>18</td><td>22</td><td>15</td><td>–</td><td>–</td><td>–</td><td>–</td></tr><tr><td>2006</td><td>26</td><td>32</td><td>15</td><td>–</td><td>15</td><td>15</td><td>–</td></tr><tr><td>2007</td><td>26</td><td>34</td><td>60</td><td>10</td><td>22</td><td>15</td><td>5</td></tr><tr><td>2008</td><td>33</td><td>40</td><td>60</td><td>11</td><td>32</td><td>50</td><td>7</td></tr><tr><td>2009</td><td>38</td><td>45</td><td>60</td><td>12</td><td>38</td><td>50</td><td>9</td></tr><tr><td>2010</td><td>42</td><td>48</td><td>60</td><td>14</td><td>44</td><td>50</td><td>12</td></tr><tr><td>2011</td><td>46</td><td>53</td><td>60</td><td>16</td><td>48</td><td>50</td><td>15</td></tr><tr><td>2012</td><td>50</td><td>57</td><td>60</td><td>18</td><td>54</td><td>50</td><td>15</td></tr><tr><td>2013</td><td>55</td><td>60</td><td>60</td><td>22,5</td><td>60</td><td>50</td><td>15</td></tr></table> <p>Wood packaging may be excluded from calculation of the overall recycling target if at least 60% of the wood is recovered and at least 15% is recycled by 2011.³³⁰ Separate targets were also established for aluminium (21% in 2012) and PET (55% in 2012).³³¹</p>	Year	Recycling objective (%)	Recovery objective (%)	Recycling targets by material (%)					Paper/Cardboard	Plastic	Glass	Metals	Wood	2005	18	22	15	–	–	–	–	2006	26	32	15	–	15	15	–	2007	26	34	60	10	22	15	5	2008	33	40	60	11	32	50	7	2009	38	45	60	12	38	50	9	2010	42	48	60	14	44	50	12	2011	46	53	60	16	48	50	15	2012	50	57	60	18	54	50	15	2013	55	60	60	22,5	60	50	15
Year	Recycling objective (%)	Recovery objective (%)				Recycling targets by material (%)																																																																																	
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2012	50	57	60	18	54	50	15																																																																																
2013	55	60	60	22,5	60	50	15																																																																																
	Uses acceptable for recycling performance targets	<p>Romania’s Packaging Directive defines recycling as “the reprocessing in a production process of the waste materials for the original purpose or for other purposes including organic recycling but excluding energy recovery”.³³²</p> <p>The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a</p>																																																																																					

³³⁰ Ibid.

³³¹ Waste Sector in Romania: EIMPack, 2007

³³² Packaging Directive: Law 211/2005

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
		standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities. ³³³
	Geographic restrictions re processing or use	Packaging waste exported to countries outside the European Union can be counted towards recovery and recycling targets only if there is evidence that the facilities operate to standards broadly equivalent to those prescribed by European laws. ³³⁴
	Requirements re collection and management systems that pre-dated EPR regulation	<p>In 2005, prior to Romania joining the EU, Romania generated about 8.0 million tons of municipal waste (around 450 kg/person); most was dumped in 234 non-conforming municipal landfills and 2,700 illegal dump sites; none of it was incinerated and less than 2.0% was recycled. Around 90% of urban residents and 6.5% of rural residents had access to organized mixed waste management services.³³⁵</p> <p>Material recycling was primarily occurring through informal systems, such as scavenging recyclable material from waste bins, landfills (often unregulated) and industrial areas for sale to scrap dealers. Scavenging of recyclable materials was estimated to be the main source of income for a significant portion of the poor in cities (~40,000 people).³³⁶</p>
	Penalties for non-compliance	<p>The Packaging Directive includes various fines for specific offences including:</p> <ul style="list-style-type: none"> • From 2000 to 4000 RON for failing to recover and recycle packaging waste; • From 4000 to 8000 RON for failing to annual report the amount of packaging waste supplied and managed; • From 5000 to 10000 RON for failing to operate separate municipal collection and recovery of packaging waste.³³⁷ <p>A penalty of 2 RON/kg (~€0.22/kg)³³⁸ is levied on the quantity of packaging which represents the difference between the target set out in the Packaging Directive and the target actually achieved. The penalty is paid to the Environmental Fund and is used to finance environmental projects.³³⁹</p>

³³³ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

³³⁴ Packaging Directive: Law 211/2005

³³⁵ Solid Waste Management in Bulgaria, Croatia, Poland and Romania: World Bank, April 2011

³³⁶ European Commission Factsheet for Romania, 2012

³³⁷ Packaging Directive: Law 211/2005

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
EPR Oversight	By whom	<p>The 2006 amendment to the Packaging Directive made the National Environmental Protection Agency responsible for identifying offences and levying penalties for certain sections of the Packaging Directive and the National Environmental Protection Agency, the National Authority for Consumer Protection and authorized representatives of local government jointly responsible for identifying offences and levying penalties for other sections of the Directive (all relating to reusable packaging).³⁴⁰</p> <p>The National Environment Fund Administration is responsible for verifying compliance with recovery and recycling targets while the National Agency for Environmental Protection is responsible for overseeing compliance by producers and PROs.³⁴¹</p>
	Size of oversight body (e.g. budget, staff)	<p>The National Environmental Protection Agency was established in 2004 and delivers its objective by co-ordinating 42 county agencies. One of the 42 county agencies (Covasna) reports that it has 40 staff, most engineers in with expertise in chemistry, hydrology, forestry, geology, agronomy, physics and civil constructions but also including ecologists, biologists, geographers and economists.³⁴²</p> <p>The annual budget of the National Environment Fund Administration from 2004 to 2006 is presented in the following graph together with the value of funds provided as grants for environmental projects.³⁴³</p>

³³⁸ Subsequently increased to ~€0.50/kg (Romanian experience on packaging and packaging waste management and the European requirements under the Directive 94/62/EC: Simona Ghiță, Head of Waste Management Unit, Ministry of Environment and Forestry, September 2010)

³³⁹ Packaging Directive: Law 211/2005

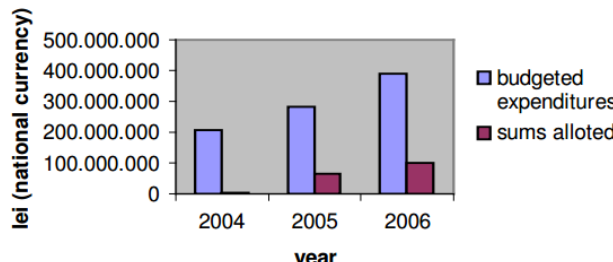
³⁴⁰ Amendment to Packaging Directive, 2006

³⁴¹ Packaging Directive: Law 211/2005

³⁴² <http://www.watercore.eu/partners12.asp>

³⁴³ <http://www.anpm.ro/buget-finante-achizitii-investitii>

Appendix I Romania Jurisdictional Scan

Topic	Element	Description																																																															
		<div><p>Fig. no. 1 – Budgeted expenditures and sums allotted by the Environmental Fund</p></div>																																																															
	Degree of producer compliance (i.e. free riders)	<p>While varying standards of living may account for some differences, the significantly lower quantities of packaging supplied, as reported to PROs in Romania, compared to other EU countries is considered to be evidence of non-compliant producers.³⁴⁴</p> <p>Table 3 – Packaging waste generated in 2009. Source: Eurostat.</p> <table><tr><th></th><th>Packaging waste (all materials) (tons)</th><th>(kg per capita)</th><th>% municipa waste)</th><th>Paper & cardboard (% packaging waste)</th><th>Plastic (% packaging waste)</th><th>Wooden (% packaging waste)</th><th>Metallic (% packaging waste)</th><th>Glass (% packaging waste)</th></tr><tr><td>EU-27</td><td>76.590.310</td><td>153,1</td><td>30</td><td>39</td><td>19</td><td>15</td><td>6</td><td>21</td></tr><tr><td>France</td><td>12.277.691</td><td>190,3</td><td>36</td><td>36</td><td>15</td><td>20</td><td>5</td><td>19</td></tr><tr><td>Germany</td><td>15.052.100</td><td>183,8</td><td>31</td><td>44</td><td>17</td><td>14</td><td>5</td><td>23</td></tr><tr><td>Portugal</td><td>1.719.274</td><td>161,7</td><td>31</td><td>41</td><td>22</td><td>6</td><td>6</td><td>25</td></tr><tr><td>Romania</td><td>998.690</td><td>46,5</td><td>13</td><td>27</td><td>29</td><td>19</td><td>6</td><td>24</td></tr><tr><td>UK</td><td>10.786.827</td><td>174,5</td><td>33</td><td>35</td><td>23</td><td>10</td><td>8</td><td>18</td></tr></table>		Packaging waste (all materials) (tons)	(kg per capita)	% municipa waste)	Paper & cardboard (% packaging waste)	Plastic (% packaging waste)	Wooden (% packaging waste)	Metallic (% packaging waste)	Glass (% packaging waste)	EU-27	76.590.310	153,1	30	39	19	15	6	21	France	12.277.691	190,3	36	36	15	20	5	19	Germany	15.052.100	183,8	31	44	17	14	5	23	Portugal	1.719.274	161,7	31	41	22	6	6	25	Romania	998.690	46,5	13	27	29	19	6	24	UK	10.786.827	174,5	33	35	23	10	8	18
	Packaging waste (all materials) (tons)	(kg per capita)	% municipa waste)	Paper & cardboard (% packaging waste)	Plastic (% packaging waste)	Wooden (% packaging waste)	Metallic (% packaging waste)	Glass (% packaging waste)																																																									
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UK	10.786.827	174,5	33	35	23	10	8	18																																																									
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	Some PROs believe that producers are under-reporting the quantity of packaging supplied.																																																															

³⁴⁴ Systems of Packaging Waste Recycling in the EU - Comparing Five Different Case-Studies: N.F. Cruza, P. Simõesb, R.C. Marques, CEG-IST, Technical University of Lisbon, 2010

Appendix I Romania Jurisdictional Scan

Topic	Element	Description																				
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	<p>In December 2015, the National Environment Fund Administration fined 6 of the licensed PROs a total of €19 million for failing to meet packaging waste collection targets or for falsely reporting the quantities of waste collected and recycled.</p> <p>While the fines are disputed by some PROs, the prosecutor's office conducted its own investigation into fictitious accounting and other legal documents that distorted the PROs responsibilities for 120,000 tonnes of packaging waste as the basis for the fines. It is estimated that the associated liabilities for this quantity of packaging waste exceed €54 million.³⁴⁵</p>																				
	Degree of compliance with service requirements	<p>In late 2010, the collection system developed by Eco-Rom Ambalaje, supported by the local authorities and waste management companies, operated in 85 cities in Romania - about 15% of Romania's population. As of 2011, separate collection of household packaging waste was reaching 23% of the population, primarily located in urban areas (46% of residents in urban areas and 4% of residents in rural areas).³⁴⁶</p>																				
	Degree of compliance with performance requirements	<p>Packaging waste targets are achieved mostly from the ICI sector. As of 2012, Romania had met its recycling targets for plastic, paper and metal packaging but had not met its recycling target for glass, its overall recycling target or its recovery target.³⁴⁷</p> <table border="1"> <thead> <tr> <th>Material</th><th>2012 Target</th><th>2012 Achieved</th></tr> </thead> <tbody> <tr> <td>Paper/cardboard</td><td>60%</td><td>68.7%</td></tr> <tr> <td>Plastic</td><td>18%</td><td>23.8%</td></tr> <tr> <td>Glass</td><td>54%</td><td>48.2%</td></tr> <tr> <td>Metals</td><td>50%</td><td>56.4%</td></tr> <tr> <td>Total recycling</td><td>50%</td><td>40.5%</td></tr> <tr> <td>Total recovery</td><td>57%</td><td>46.7%</td></tr> </tbody> </table>	Material	2012 Target	2012 Achieved	Paper/cardboard	60%	68.7%	Plastic	18%	23.8%	Glass	54%	48.2%	Metals	50%	56.4%	Total recycling	50%	40.5%	Total recovery	57%
Material	2012 Target	2012 Achieved																				
Paper/cardboard	60%	68.7%																				
Plastic	18%	23.8%																				
Glass	54%	48.2%																				
Metals	50%	56.4%																				
Total recycling	50%	40.5%																				
Total recovery	57%	46.7%																				

³⁴⁵ <http://www.econet-romania.com/en/single-news/806/crisis-in-romanian-sector-for-packaging-waste-.html>

³⁴⁶ <http://ecoromambalaje.ro/>

³⁴⁷ European Commission Factsheet for Romania, 2012

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
		Romania had also achieved the EU Packaging Directive targets for plastic, paper and metal packaging but had not met the glass target. Romania was aiming to achieve the EU targets by 2013 so had one more year (following the 2012 data year) in which to increase its glass recovery. ³⁴⁸
	Use of penalties	<p>In December 2015, the National Environment Fund Administration fined 6 of the licensed PROs a total of €19 million for failing to meet packaging waste collection targets or for falsely reporting the quantities of waste collected and recycled.</p> <p>While the fines are disputed by some PROs, the prosecutor's office conducted its own investigation into fictitious accounting and other legal documents that distorted the PROs responsibilities for 120,000 tonnes of packaging waste as the basis for the fines. It is estimated that the associated liabilities for this quantity of packaging waste exceed €54 million.³⁴⁹</p>
Competition	Forms of competition within a regulated product category	Municipalities can manage waste directly or they can contract with a company to provide the service following a public tender procedure.
	Forms of competition between stewardship programs or producers in the same product category	<p>PROs compete on the value of fees charged to members and, given the relative immaturity of the packaging collection and recycling system in Romania, their ability to meet recycling and recovery obligations.</p> <p>In 2014, Eco-Rom Ambalaje offered a new service to members to calculate CO² emissions reduction as a result of packaging recycling. This expands the basis on which ERA can compete for members.³⁵⁰</p>
	Forms of competition in procuring and delivering collection services	Municipalities can manage waste directly or they can contract with a company to provide the service following a public tender procedure.
	Forms of competition in procuring and delivering post-collection services	PROs utilize competitive tenders to procure collection and processing from private companies.

³⁴⁸ European Commission Factsheet for Romania, 2012

³⁴⁹ <http://www.econet-romania.com/en/single-news/806/crisis-in-romanian-sector-for-packaging-waste-.html>

³⁵⁰ <http://ecoromambalaje.ro/>

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
	Requirements of the jurisdiction's competition laws	<p>Romania's Competition Act, which is administered by Romania's Competition Council (RCC), sets out provisions on restrictive agreements, single firm conduct, and merger control that largely follow the norms in EU competition law and implementing regulations, with a few exceptions. As Romania is an EU member, Articles 101 and 102 of the Treaty on the Functioning of the European Union (TFEU) are applicable as well in proceedings before the competition authority and the courts.</p> <p>The provisions in the Competition Act are modelled after Article 101 of the TFEU. Like Article 101 of TFEU, Article 5(1) of Romania's Competition Act prohibits firms from entering into agreements that restrict competition and provides a non-exhaustive list of restrictions that may be considered unlawful under the Act. The list deviates from Article 101(1) in two respects: Article 5(1)(f) explicitly mentions bid rigging as a prohibited practice; and Article 5(1)(g) prohibits practices that eliminate other competitors from the market or limits their freedom of exercising competition as well as group boycotts. The latter provision potentially could be of far-reaching scope. Taken literally, it would cover procompetitive, efficient agreements that make it more difficult for rivals to compete.</p> <p>Article 5(2) identifies the conditions under which an agreement that falls under Article 5(1) will nevertheless be lawful. The provision is identical to Article 101(3) TFEU, thus putting efficiency concerns in the centre of analysis of agreements found to potentially restrict competition. There are no alternative criteria for exempting restrictive agreements, and no other non-competition policies against which the harmful effects of an agreement can be balanced.</p> <p>Article 5(3) makes the European Commission's block exemption regulations applicable to agreements that are subject to the Competition Law, including those that do not affect trade between member states. The parties have the burden of proof that their agreement meets the exemption criteria in Article 5(2) or qualifies for an exemption under a relevant block exemption.</p>

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
		<p>Article 49 declares that agreements that infringe Article 5 or the abuse of dominance provision in Article 6 (or their EU law equivalents) are null and void, and therefore unenforceable.</p> <p>Article 8 introduces the provisions of the European Commission's <i>de minimis</i> Notice in the Competition Act, thus exempting certain agreements from the application of Article 5(1) where the parties have very low market shares. Like in the <i>de minimis</i> Notice, the market share thresholds are 10% for horizontal agreements and 15% for vertical agreements. The Article 8 <i>de minimis</i> exception does not apply to agreements that include restrictions that are considered “hard core,” such as price fixing, the sharing of customers, and a range of vertical intra-brand restraints such as resale price maintenance.</p> <p>Interestingly, Article 9 sets out the circumstances where the RCC can intervene against acts by public institutions that limit, prevent, or distort competition. It also gives the RCC authority to issue opinions on how public acts, including proposed statutes, affect competition. This is an important feature in mixed economies where regulatory bodies engage in commercial activities.</p>
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	No
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	None identified
Common to Infrastructure	Who operates infrastructure	<p>Municipalities are responsible for organizing household waste management as an integrated system and are obligated to collect paper, metal, plastic and glass packaging waste separately. Municipalities can deliver services directly using in-house staff but generally contract with private companies to provide collection and processing services, often a single company in small towns and several companies in larger cities.³⁵¹</p>

³⁵¹ Romanian experience on packaging and packaging waste management and the European requirements under the Directive 94/62/EC: Simona Ghiță, Head of Waste Management Unit, Ministry of Environment and Forestry, September 2010

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
		As of 20110, 1,238 companies were permitted to collect, recycle or recover packaging waste. ³⁵²
	Arrangements between PROs and infrastructure operators	<p>All PROs are responsible for both residential and ICI packaging waste. The PROs must establish partnerships with municipalities for separate collection of packaging waste as a part of municipalities' integrated waste management systems and enter into contracts with transportation and companies able to recycle or recover packaging waste.</p> <p>PROs establish financial arrangements with municipalities for the additional cost of separate collection of packaging waste. The same contract terms are used for all municipalities. Municipalities are paid per tonne of packaging waste collected, rather than for line-by-line costs. Municipalities choose collection system design and equipment for packaging waste but within the context of Romania's regulatory requirements.³⁵³</p> <p>By 2012, Eco-Rom Ambalaje (ERA) had begun to support introduction of a collection system through agreements with 72 towns and 78 municipalities and their contractors. ERA also had contracts with private companies to collect and process ICI packaging waste.³⁵⁴</p> <p>In Romania, the companies processing packaging waste also market materials and retain commodity revenue. As such, payments from the PROs are not intended to completely cover the costs of collection and recycling/recovery services provided by municipalities, their contractors and private companies.³⁵⁵</p> <p>ERA provides an annual bonus payment to the private companies (set through agreement with</p>

³⁵² Waste Sector in Romania: EIMPack, 2007

³⁵³ Romanian experience on packaging and packaging waste management and the European requirements under the Directive 94/62/EC: Simona Ghiță, Head of Waste Management Unit, Ministry of Environment and Forestry, September 2010

³⁵⁴ <http://ecoromambalaje.ro/>

³⁵⁵ Economic Impact of the Packaging and Packaging Waste Directive: EIMPack, April 2012

Appendix I Romania Jurisdictional Scan

Topic	Element	Description																												
		<p>local authorities and waste companies) based on their operational costs and the proportion of each packaging material. The following table sets out the bonus payment in 2010: ³⁵⁶</p> <p>Table 19 – ERA’s financial support for WMCs</p> <table><tr><th>Packaging Material</th><th>Bonus payment (€/tonne) 2010</th></tr><tr><td>Glass</td><td>23,89</td></tr><tr><td>PET</td><td>32,40</td></tr><tr><td>Plastics</td><td>15,39</td></tr><tr><td>Cardboard paper</td><td>13,67</td></tr><tr><td>Steel</td><td>13,88</td></tr><tr><td>Aluminium</td><td>13,89</td></tr><tr><td>Wood</td><td>10,60</td></tr></table> <p>Source: EIMPack (2012c)</p> <p>The following graph illustrates the number of companies with whom ERA has had contracts since it began operations in 2004. ³⁵⁷</p> <p>Companii de Management al deeurilor parteneri Eco-Rom Ambalaje</p> <table><tr><th>Year</th><th>Number of Companies</th></tr><tr><td>2004</td><td>18</td></tr><tr><td>...2007</td><td>139</td></tr><tr><td>....2010</td><td>191</td></tr><tr><td>....2012</td><td>214</td></tr><tr><td>2014</td><td>188</td></tr></table>	Packaging Material	Bonus payment (€/tonne) 2010	Glass	23,89	PET	32,40	Plastics	15,39	Cardboard paper	13,67	Steel	13,88	Aluminium	13,89	Wood	10,60	Year	Number of Companies	2004	18	...2007	1392010	1912012	214	2014	188
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³⁵⁶ Ibid.

³⁵⁷ <http://ecoromambalaje.ro/>

Appendix I Romania Jurisdictional Scan

Topic	Element	Description																					
	Arrangements among PROs	None identified																					
	Role of government	None																					
	Role of another party (e.g. clearinghouse)	None																					
Outcomes	Have environment public policy objectives been met	<p>By late 2010, the collection system developed by Eco-Rom Ambalaje, supported by the local authorities and waste management companies, operated in 85 cities in Romania - about 15% of Romania's population. As of 2011, separate collection of household packaging waste was reaching 23% of the population, primarily located in urban areas (46% of residents in urban areas and 4% of residents in rural areas). Some rural areas had no recycling collection services. ERA reports that, in 2015, it provided over 9 M residents with access to separate collection of packaging and that its activities were responsible for 75% of the packaging collected and managed in Romania.³⁵⁸</p> <p>Packaging waste targets are achieved mostly from the ICI sector. As of 2012, Romania had met its recycling targets for plastic, paper and metal packaging but had not met its recycling target for glass, its overall recycling target or its recovery target.³⁵⁹</p> <table border="1"> <thead> <tr> <th>Material</th><th>2012 Target</th><th>2012 Achieved</th></tr> </thead> <tbody> <tr> <td>Paper/cardboard</td><td>60%</td><td>68.7%</td></tr> <tr> <td>Plastic</td><td>18%</td><td>23.8%</td></tr> <tr> <td>Glass</td><td>54%</td><td>48.2%</td></tr> <tr> <td>Metals</td><td>50%</td><td>56.4%</td></tr> <tr> <td>Total recycling</td><td>50%</td><td>40.5%</td></tr> <tr> <td>Total recovery</td><td>57%</td><td>46.7%</td></tr> </tbody> </table>	Material	2012 Target	2012 Achieved	Paper/cardboard	60%	68.7%	Plastic	18%	23.8%	Glass	54%	48.2%	Metals	50%	56.4%	Total recycling	50%	40.5%	Total recovery	57%	46.7%
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³⁵⁸ <http://ecoromambalaje.ro/>

³⁵⁹ European Commission Factsheet for Romania, 2012

Appendix I Romania Jurisdictional Scan

Topic	Element	Description																																																																																																		
		<p>Romania had also achieved the EU Packaging Directive targets for plastic, paper and metal packaging but had not met the glass target. Romania was aiming to achieve the EU targets by 2013 so had one more year (following the 2012 data year) in which to increase its glass recovery.³⁶⁰</p> <table><tr><th colspan="11">Statistics on packaging waste [EUROSTAT 2012d]</th></tr><tr><th rowspan="2"></th><th colspan="2">Plastic packaging waste</th><th colspan="2">Paper packaging waste</th><th colspan="2">Metal packaging waste</th><th colspan="2">Glass packaging waste</th><th colspan="2">Total packaging waste</th></tr><tr><th>RO</th><th>EU</th><th>RO</th><th>EU</th><th>RO</th><th>EU</th><th>RO</th><th>EU</th><th>RO</th><th>EU</th></tr><tr><td>Total amount generated (in kt)</td><td>294</td><td>14,590</td><td>272</td><td>29,783</td><td>63</td><td>4,544</td><td>180</td><td>16,006</td><td>999</td><td>76,593</td></tr><tr><td>Total amount generated per capita (in kg)</td><td>13.7</td><td>29.2</td><td>12.6</td><td>59.5</td><td>3</td><td>9.1</td><td>8.4</td><td>32</td><td>46.5</td><td>153.1</td></tr><tr><td>Share of total packaging waste (in %)</td><td>29.4</td><td>19</td><td>27.2</td><td>38.9</td><td>6.3</td><td>5.9</td><td>18</td><td>20.9</td><td>100</td><td>100</td></tr><tr><td>Recycling rates (in %)</td><td>23.8</td><td>32.2</td><td>68.7</td><td>83.4</td><td>56.4</td><td>69.5</td><td>48.2</td><td>67.6</td><td>40.5</td><td>62.5</td></tr><tr><td>Recovery rates including incineration with energy recovery (in %)</td><td>28.5</td><td>59.7</td><td>73.3</td><td>90.7</td><td>56.4</td><td>69.9</td><td>48.2</td><td>67.6</td><td>46.7</td><td>74.6</td></tr><tr><td>Disposal rates (in %)</td><td>71.5</td><td>40.3</td><td>26.7</td><td>9.3</td><td>43.6</td><td>30.1</td><td>51.8</td><td>32.4</td><td>53.3</td><td>25.4</td></tr></table> <p>The Packaging Directive has led to much higher rates of packaging collection and recycling than is occurring through municipal efforts alone. The following graph compares the quantity of packaging waste recycled through the joint efforts of the PROs and municipalities with other types of recycling being carried out by municipalities.³⁶¹</p>	Statistics on packaging waste [EUROSTAT 2012d]												Plastic packaging waste		Paper packaging waste		Metal packaging waste		Glass packaging waste		Total packaging waste		RO	EU	RO	EU	RO	EU	RO	EU	RO	EU	Total amount generated (in kt)	294	14,590	272	29,783	63	4,544	180	16,006	999	76,593	Total amount generated per capita (in kg)	13.7	29.2	12.6	59.5	3	9.1	8.4	32	46.5	153.1	Share of total packaging waste (in %)	29.4	19	27.2	38.9	6.3	5.9	18	20.9	100	100	Recycling rates (in %)	23.8	32.2	68.7	83.4	56.4	69.5	48.2	67.6	40.5	62.5	Recovery rates including incineration with energy recovery (in %)	28.5	59.7	73.3	90.7	56.4	69.9	48.2	67.6	46.7	74.6	Disposal rates (in %)	71.5	40.3	26.7	9.3	43.6	30.1	51.8	32.4	53.3	25.4
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³⁶⁰ Ibid.

³⁶¹ Implementation of Integrated Waste Management Systems in Romania: Teamnet Engineering, 2015

Appendix I Romania Jurisdictional Scan

Topic	Element	Description																																	
		<p>Figure 2.8 Comparison of packaging waste recycled and material MSW recycled</p> <div><p>Relation between the amount of recycled packaging waste and material recycled MSW in Romania</p><table border="1"><caption>Data for Figure 2.8: Recycling in 1000 tonnes</caption><thead><tr><th>Year</th><th>Amount of material recycled MSW (Blue line)</th><th>Amount of recycled packaging waste (Red line)</th></tr></thead><tbody><tr><td>2001</td><td>125</td><td></td></tr><tr><td>2002</td><td>170</td><td></td></tr><tr><td>2003</td><td>20</td><td></td></tr><tr><td>2004</td><td>80</td><td></td></tr><tr><td>2005</td><td>145</td><td>260</td></tr><tr><td>2006</td><td>40</td><td>375</td></tr><tr><td>2007</td><td>35</td><td>390</td></tr><tr><td>2008</td><td>70</td><td>390</td></tr><tr><td>2009</td><td>75</td><td>400</td></tr><tr><td>2010</td><td>75</td><td></td></tr></tbody></table></div> <p>Source: Eurostat, 2012</p>	Year	Amount of material recycled MSW (Blue line)	Amount of recycled packaging waste (Red line)	2001	125		2002	170		2003	20		2004	80		2005	145	260	2006	40	375	2007	35	390	2008	70	390	2009	75	400	2010	75	
Year	Amount of material recycled MSW (Blue line)	Amount of recycled packaging waste (Red line)																																	
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	Economic outcomes	<p>In 2014, Eco-Rom charged its members the following fee rates:³⁶²</p> <table><tr><th colspan="7">PRO Fees as of January 1, 2014 € per tonne excluding VAT</th></tr><tr><th>Paper</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics³⁶³</th><th>Composites</th><th>Wood</th></tr><tr><td>12.43</td><td>17.94</td><td>11.97</td><td>28.83</td><td>28.42</td><td rowspan="2">12.66</td><td rowspan="2">12.24</td></tr><tr><td></td><td></td><td></td><td></td><td>12.66</td></tr></table>	PRO Fees as of January 1, 2014 € per tonne excluding VAT							Paper	Glass	Steel	Aluminum	Plastics ³⁶³	Composites	Wood	12.43	17.94	11.97	28.83	28.42	12.66	12.24					12.66							
PRO Fees as of January 1, 2014 € per tonne excluding VAT																																			
Paper	Glass	Steel	Aluminum	Plastics ³⁶³	Composites	Wood																													
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³⁶² Participation Costs Overview 2014: Pro Europe, April 2014

³⁶³ Where more than one fee is listed for a material, the PRO has used sub-categories with different fee rates.

Appendix I Romania Jurisdictional Scan

Topic	Element	Description
		The Packaging Directive includes a provision that product purchases from public funds must give priority to products derived from recycled materials or whose packaging is obtained from recycled materials. ³⁶⁴
	Perceived effectiveness within jurisdiction	A 2011 report for the World Bank identified solid waste management as Romania's most pressing environment issue, in part due to non-compliance with EU requirements. This same report identified a lack of institutional capacity to manage large projects and a lack of markets for of recyclable materials as major weaknesses. ³⁶⁵
	Policy gaps and/or conflicts	In April 2015, the European Commission referred Romania to the EU Court of Justice over its failure to enact revised EU legislation on packaging waste into domestic law. Member states had to bring into force the laws necessary to comply with revised Packaging Directive by September 30, 2013. After it missed the original deadline, Romania was sent a letter of formal notice in November 2013, followed by a reasoned opinion in July 2014. ³⁶⁶
	Are changes being considered	Discussions about a new regulation governing the function of the National Environmental Protection Agency and overhauling the permitting regime to integrate the various permits and authorizations in a single document. ³⁶⁷

³⁶⁴ Packaging Directive: Law 211/2005

³⁶⁵ Solid Waste Management in Bulgaria, Croatia, Poland and Romania: World Bank, April 2011

³⁶⁶ http://europa.eu/rapid/press-release_IP-15-4874_en.htm

³⁶⁷ An Overview on Environment Law in Romania, Cross-border Environment Handbook, 2008-2009: Roxana Ionescu

United Kingdom Jurisdictional Scan

Topic	Element	Description													
Background	Jurisdiction	United Kingdom													
	Size	Geographical size: 248,528 km ² Population: 64,308,261 (2014) GDP: €1,899.0 billion (2013) ³⁶⁸													
	Title of relevant legislation and/or regulation	Producer Responsibility Obligations (Packaging Waste) Regulations 1997 (as amended in 2007, 2008, 2010, 2012 and 2013): requires registration with the Environment Agency or a compliance scheme and recovery of specified tonnages of packaging ³⁶⁹													
	Responsible government department	Environment Agency (EA) Scottish Environment Protection Agency (SEPA) Natural Resources Wales (NRW) Northern Ireland Environment Agency (NIEA) ³⁷⁰													
	Designated material	Packaging waste to align with the EU Packaging Directive													
	Name and structure of PROs (i.e. for-profit, not-for-profit, private, public)	<p>32 PROs were registered for 2015. The text in brackets following the PRO name identifies the responsible government department with whom the company is registered.³⁷¹</p> <p>All PROs are assumed to be for-profit, private organizations.</p> <table><tr><td>BiffPack (EA and NIEA)</td><td>Packcare</td></tr><tr><td>Clarity</td><td>Papco</td></tr><tr><td>Co2 Compliance (SEPA)</td><td>Paperpak (EA and NIEA)</td></tr><tr><td>Compliance Link (NIEA, SEPA)</td><td>Pennine-Pack [EA, NIEA]</td></tr><tr><td>Comply Direct (NIEA)</td><td>Recycle Wales</td></tr><tr><td>ComplyPak (EA, NIEA)</td><td>Recycle-Pak (NIEA, SEPA)</td></tr><tr><td>DHL Packaging Compliance (NIEA, EA)</td><td>REPIC</td></tr></table>	BiffPack (EA and NIEA)	Packcare	Clarity	Papco	Co2 Compliance (SEPA)	Paperpak (EA and NIEA)	Compliance Link (NIEA, SEPA)	Pennine-Pack [EA, NIEA]	Comply Direct (NIEA)	Recycle Wales	ComplyPak (EA, NIEA)	Recycle-Pak (NIEA, SEPA)	DHL Packaging Compliance (NIEA, EA)
BiffPack (EA and NIEA)	Packcare														
Clarity	Papco														
Co2 Compliance (SEPA)	Paperpak (EA and NIEA)														
Compliance Link (NIEA, SEPA)	Pennine-Pack [EA, NIEA]														
Comply Direct (NIEA)	Recycle Wales														
ComplyPak (EA, NIEA)	Recycle-Pak (NIEA, SEPA)														
DHL Packaging Compliance (NIEA, EA)	REPIC														

³⁶⁸ <http://www.wikiwasteschemes.com/>

³⁶⁹ Packaging (Essential Requirements) Regulations 1998: requires producers to minimize packaging volume and weight, consistent with the level necessary for safety, hygiene and acceptance by the consumer design and use packaging in a manner that permits its reuse and recovery and limit the concentration of lead, cadmium, mercury and hexavalent chromium in packaging.

³⁷⁰ A Look at Oversight/Regulation: Chris Grove, Environment Agency

³⁷¹ National Packaging Waste Database – 2015 Compliance Scheme Public Register: Environment Agency

United Kingdom Jurisdictional Scan

Topic	Element	Description
		<p>ecosurety (EA, NIEA, SEPA)</p> <p>Enpack</p> <p>ERP UK Ltd (NIEA)</p> <p>Ethical Compliance</p> <p>Greenpack</p> <p>Kite Environmental Solutions</p> <p>MITIEpack</p> <p>Nipak Ltd (NIEA)</p> <p>Onepack</p> <p>Scotpak (SEPA)</p> <p>Sustain Drinks Packaging Partnership</p> <p>SWS Compak</p> <p>Synergy Compliance [EA, NIEA]</p> <p>Toddpak</p> <p>Valpak (EA, NIEA, SEPA)</p> <p>ValuePack</p> <p>Veolia (EA, NIEA, SEPA)</p> <p>Wastepack (EA, SEPA, NIEA)</p>
EPR Regulatory Requirements	<p>Where a single PRO is required to be established</p> <ul style="list-style-type: none"> - rationale for affording a monopoly - regulatory checks to ensure the monopoly operates in the public interest for the benefit of all citizens (rather than for the benefit of those afforded monopoly power) - regulatory checks to ensure the monopoly will strive for dynamic efficiencies in the absence of competition 	<p>The United Kingdom does not require a single PRO to be established.</p>
	<p>Where multiple PROs can form</p> <ul style="list-style-type: none"> - regulatory requirements restricting or specifying how producers may convene themselves 	<p>Each PRO must apply to the responsible government department to be approved to operate. Examples of information to be submitted include: constitution of the scheme including rules for members; methods by which packaging waste will be recovered and recycled; evidence of sufficient financial resources to buy evidence notes to meet the PRO's obligation; evidence of technical expertise among staff; role of the waste generator in the PRO's system; how the use of recycled packaging waste in the manufacture of products or materials supplied by its members will increase. Once approved, a PRO must register, pay a registration fee and submit an</p>

United Kingdom Jurisdictional Scan

Topic	Element	Description
		operational plan each year. ³⁷²
	Who is liable (individual producer or PRO)	<p>A producer can purchase packaging waste recovery notes (PRNs) issued by accredited reprocessors or packaging waste export recovery notes (PERNs) issued by accredited exporters or both to satisfy his obligations directly or a producer may join a PRO. Membership in a PRO exempts the producer from individual recovery/recycling obligations. The PRO registered with the Environment Agency is then responsible for reaching the targets.³⁷³</p> <p>Producers include: raw material manufacturer (6% of responsibility); converter (9% of responsibility); packer/filler (37% of responsibility); seller (48% of responsibility); and, importer (100%).³⁷⁴</p> <p>Where a producer joins a PRO that is registered with the responsible government department, the producer is exempt from complying with his producer responsibility obligations for that year. The PRO must meet the recovery and recycling obligations and, where appropriate, the consumer information obligations, that its members would have had but for their membership in the PRO.³⁷⁵</p>
	Scope of sectoral service requirements (residential and/or ICI)	To align with the EU Packaging Directive: industrial, commercial, office, shop, service, household or any other level.
	Scope and nature of collection service requirements (e.g. geographic coverage, type of collection service)	None specified
	Scope and nature of collection performance targets	None specified

³⁷² Producer Responsibility Obligations (Packaging Waste) Regulations, 2007 as amended

³⁷³ Ibid.

³⁷⁴ UK Producer Responsibility Landscape: Chris Grove, Environment Agency

³⁷⁵ Producer Responsibility Obligations (Packaging Waste) Regulations, 2007 as amended

United Kingdom Jurisdictional Scan

Topic	Element	Description
	Scope and nature of recycling performance targets	The Regulations, as amended, set out the following performance targets. ³⁷⁶
	Uses acceptable for recycling performance targets	92% of collected packaging must be directed to recycling. Energy recovery is not considered recycling. ³⁷⁹
		From 2013, there is also a requirement for the proportion of glass that must be used as remelt: ³⁸⁰
		Recovery and recycling operations must be carried out in a way that achieves the level of

³⁷⁶ Ibid.

³⁷⁷ The 2006 target was reduced from 52% and the 2017 target was reduced from 57% as part of the government's 2016 budget. From 2017 to 2020, the target will increase each year by 2%, reaching 57% by 2020.

³⁷⁸ Ibid.

³⁷⁹ Producer Responsibility Obligations (Packaging Waste) Regulations, 2007 as amended

³⁸⁰ Policy Paper: 2010 to 2015 government policy: waste and recycling: Department for Environment, Food and Rural Affairs, May 8, 2015

United Kingdom Jurisdictional Scan

Topic	Element	Description
		environmental protection set out in the EU Waste Framework Directive. The EU has end-of-waste regulations for iron, steel and aluminium scrap, glass cullet and copper scrap to determine when the waste is no longer considered a waste: the waste has been converted into a distinct and marketable product; the processed substance can be used in exactly the same way as a non-waste; and the processed substance can be stored and used with no worse environmental effects when compared to the material it is intended to replace. For example, glass cullet must comply with a customer specification, an industry specification or a standard for direct use in the production of glass substances or objects by re-melting in glass manufacturing facilities. ³⁸¹
	Geographic restrictions re processing or use	To be accredited, exporters must submit specific evidence for destinations in non-EU or non-OECD countries and evidence for all reproprocessors of glass packaging, including those in EU and OECD countries, so that the responsible government department can assess whether the reproprocessor's site is capable of re-melting in glass manufacturing facilities. ³⁸²
	Requirements re collection and management systems that pre-dated EPR regulation	None. The UK was recovering an estimated 29% of packaging prior to the EPR program. ³⁸³
	Penalties for non-compliance	If a producer fails to meet its legal obligations or provides false or misleading information, the producer is subject to prosecution under criminal law. ³⁸⁴ Failure by a PRO to comply with its operational plan can result in de-registration or prosecution under criminal law. ³⁸⁵ England and Wales also have civil penalties including fixed penalties for minor offences, higher fines for more serious offences and enforcement undertakings that redress the impact of non-compliance (offer from a producer or a PRO to redress the noncompliance that can be accepted or rejected by the responsible government department). ³⁸⁶

³⁸¹ http://ec.europa.eu/environment/waste/framework/end_of_waste.htm

³⁸² Producer Responsibility Obligations (Packaging Waste) Regulations, 2007 as amended

³⁸³ UK Producer Responsibility Landscape: Chris Grove, Environment Agency

³⁸⁴ Producer Responsibility Obligations (Packaging Waste) Regulations, 2007 as amended

³⁸⁵ Ibid.

³⁸⁶ Packaging Waste – Producer Responsibilities: Environment Agency, February 26, 2016

United Kingdom Jurisdictional Scan

Topic	Element	Description
EPR Oversight	By whom	Responsibility for enforcing the Packaging Regulations rests with the Environment Agency in England and Wales. The Scottish Environment Protection Agency (SEPA) is responsible in Scotland. ³⁸⁷
	Size of oversight body (e.g. budget, staff)	<p>The Environment Agency has an annual budget of \$1.7 B and 10,000 staff for environmental protection and flood defence.³⁸⁸</p> <p>The Environment Agency registers packaging producers, finds free riders, audits packaging data reported by producers, permits reprocessors and exporters including site inspections and audits of recovery and recycling activities. The Environment Agency oversees 6,000 registered producers (reporting 10.7 M tonnes supplied), 32 PROs, 160 reprocessors and 196 exporters. PRNs and PERNs are issued for 7.3 M tonnes (93% recycled and 7% EFW).³⁸⁹</p> <p>The Environment Agency receives \$6.8 M per year in packaging producer registration fees (ranging from \$975 to \$1,320 per producer), reprocessor/exporter accreditation fees (\$4,475 per applicant) and PRO accreditation fees. Fees paid by packaging producers, reprocessors, exporters and PROs are 'ring fenced' to ensure that monitoring and enforcement is not subject to reduction in times of public finance pressure. 100 FTE staff are assigned to EPR (packaging, WEEE and batteries).³⁹⁰</p>
	Degree of producer compliance (i.e. free riders)	Seven enforcement undertakings have been accepted by the Environment Agency to rectify a failure by a producer to register (and therefore also a failure to take reasonable steps to recover and recycle packaging waste). ³⁹¹
	Degree of accuracy in reporting by producers (i.e. prevalence of data gaps)	Seven enforcement undertakings have been accepted by the Environment Agency to rectify a failure by a producer to register (and therefore also a failure to take reasonable steps to recover and recycle packaging waste). ³⁹²

³⁸⁷ A Look at Oversight/Regulation: Chris Grove, Environment Agency

³⁸⁸ UK Producer Responsibility Landscape: Chris Grove, Environment Agency

³⁸⁹ Ibid.

³⁹⁰ Ibid.

³⁹¹ Civil Sanctions under the Regulatory Enforcement and Sanctions Act 2008: Environment Agency

³⁹² Ibid.

United Kingdom Jurisdictional Scan

Topic	Element	Description
	Degree of accuracy in reporting by PROs (i.e. prevalence of data gaps)	The Environment Agency's inspection teams check data quality and accuracy and audit documents. If errors are identified, the PRO must resubmit. ³⁹³
	Degree of compliance with service requirements	There are no service requirements.
	Degree of compliance with performance requirements	Seven enforcement undertakings have been accepted by the Environment Agency to rectify a failure by a producer to register (and therefore also a failure to take reasonable steps to recover and recycle packaging waste). ³⁹⁴
	Use of penalties	An outcome of one of the seven enforcement undertakings where a producer failed to register was: the producer registered with a PRO, assigned a staff person to be responsible for compliance, implemented an internal audit/review, reimbursed the Environment Agency for its enforcement costs and paid £20,181 to a wildlife trust. ³⁹⁵
Competition	Forms of competition within a regulated product category	Where municipalities subcontract collection of packaging from households, private companies compete to provide the service. Private companies compete to provide collection of packaging from businesses. Accredited reproprocessors compete with both accredited and non-accredited reproprocessors. Accredited exporters compete with both accredited and non-accredited exporters.
	Forms of competition between stewardship programs or producers in the same product category	Accredited PROs compete with other accredited PROs for members based on their relative efficiency in either directly delivering recycling services or in purchasing PRNs and PERNs, and on their relative efficiency in administering their organization. Producers directly purchasing PRNs and PERNs will compete with other producers acting directly and accredited PROs.
	Forms of competition in procuring and delivering collection services	Where municipalities subcontract collection of packaging from households, private companies compete to provide the service. Private companies compete to provide collection of packaging from businesses.
	Forms of competition in procuring and delivering post-collection services	Accredited reproprocessors compete with both accredited and non-accredited reproprocessors. Accredited exporters compete with both accredited and non-accredited exporters.

³⁹³ A Look at Oversight/Regulation: Chris Grove, Environment Agency

³⁹⁴ Civil Sanctions under the Regulatory Enforcement and Sanctions Act 2008: Environment Agency

³⁹⁵ Ibid.

United Kingdom Jurisdictional Scan

Topic	Element	Description
	Requirements of the jurisdiction's competition laws	<p>United Kingdom competition law is affected by both British and European elements.</p> <p>The Competition Act 1998 and the Enterprise Act 2002 are the most important statutes for cases with a purely national dimension. However if the effect of a business' conduct would reach across borders, the European Commission has competence to deal with the problems, and exclusively EU law would apply. Even so, section 60 of the Competition Act 1998 provides that UK rules are to be applied in line with European jurisprudence.</p> <p>The UK competition law is focused on three main objectives:</p> <ul style="list-style-type: none"> • Prohibiting agreements or practices that restrict free trading and competition between business entities. This includes in particular the repression of cartels. • Banning abusive behaviour by a firm dominating a market, or anti-competitive practices that tend to lead to such a dominant position. Practices controlled in this way may include predatory pricing, tying, price gouging, refusal to deal and many others. • Supervising the mergers and acquisitions of large corporations, including some joint ventures. Transactions that are considered to threaten the competitive process can be prohibited altogether, or approved subject to "remedies" such as an obligation to divest part of the merged business or to offer licenses or access to facilities to enable other businesses to continue competing. <p>The Competition and Markets Authority (CMA) is the primary regulatory body for competition law enforcement. It was created through the merger of the Office of Fair Trading (OFT) with the Competition Commission. The formation of the CMA was enacted in Part 3 of the Enterprise and Regulatory Reform Act 2013, which received royal assent on April 25, 2013.</p>
	Have competition laws been applied to the delivery of services under EPR or to any PRO?	No

United Kingdom Jurisdictional Scan

Topic	Element	Description
	Extra-jurisdictional competitive dynamic and effect on competition within jurisdiction	Given that the United Kingdom is an island, the extra-jurisdictional competitive dynamic includes competition for export markets and companies based outside of the UK establishing operations within the UK. For example, Veolia Environnement S.A. is a French transnational company providing water management, waste management and energy services. Veolia began business in the UK by building an energy recovery facility in 1993 and branched into providing producer compliance services in 2001.
Approach to Common Infrastructure	Who operates infrastructure	<p>Collection and recycling of packaging materials is carried out by municipalities, waste management companies and material reprocessors. Exporters arrange shipments to end-markets outside of the UK.</p> <p>Reprocessors are accredited on a site-specific basis. The two main criteria for accreditation are: the provision of a system of documentation to be established with regard to the material delivered to a reprocessor and that the reprocessor should reach an appropriate operating standard.³⁹⁶</p> <p>Exporters are required to provide an auditable trail from sources of packaging waste through to the reprocessing in overseas facilities.³⁹⁷</p> <p>For each tonne of packaging material recycled or recovered, the final reprocessor is entitled to produce a PRN (and the exporter is entitled to produce a PERN) which he may then sell to an obligated business who can use it to fulfill some of his recycling obligations.³⁹⁸</p>
	Arrangements between PROs and infrastructure operators	<p>PROs purchase PRNs from accredited reprocessors and PERNs from accredited exporters through one-on-one commercial arrangements.</p> <p>PRNs and PERNS represent the amount of recycling carried out.³⁹⁹ Where producers or PROs choose to buy PRNs or PERNs rather than do the necessary recycling directly, the purchase of the notes channels funds from packaging producers to others in the recycling chain.⁴⁰⁰</p>

³⁹⁶ Producer Responsibility Obligations (Packaging Waste) Regulations, 2007 as amended

³⁹⁷ Ibid.

³⁹⁸ Ibid.

United Kingdom Jurisdictional Scan

Topic	Element	Description																																			
	Arrangements among PROs	None (unless a PRO has over-purchased PRNs or PERNS and has surplus to sell).																																			
	Role of government	Registration and accreditation of PROs, reproprocessors and exporters.																																			
	Role of another party (e.g. clearinghouse)	None																																			
Outcomes	Have environment public policy objectives been met	Since 2008, the UK has met, and in some cases exceeded, the minimum recovery and recycling targets set in the EU Packaging Directive. ⁴⁰¹ Packaging recycling rates doubled between 1997 and 2008.																																			
		<table><tr><th>Material</th><th>EU Targets</th><th>2008⁴⁰²</th><th>2013⁴⁰³</th></tr><tr><td>Metal</td><td>50%</td><td>56.9%</td><td>57.4%</td></tr><tr><td>Glass</td><td>60%</td><td>61.3%</td><td>68.3%</td></tr><tr><td>Paper/ board</td><td>60%</td><td>79.8%</td><td>89.4%</td></tr><tr><td>Plastic</td><td>22.5%</td><td>23.7%</td><td>31.6%⁴⁰⁴</td></tr><tr><td>Wood</td><td>15%</td><td>78.5%</td><td>42.3%</td></tr><tr><td>Total recycling and composting</td><td>55%</td><td>61.7%</td><td>64.6%</td></tr><tr><td>Total recycling, composting and energy recovery</td><td>60%</td><td>65.7%</td><td>72.7%</td></tr></table>				Material	EU Targets	2008 ⁴⁰²	2013 ⁴⁰³	Metal	50%	56.9%	57.4%	Glass	60%	61.3%	68.3%	Paper/ board	60%	79.8%	89.4%	Plastic	22.5%	23.7%	31.6% ⁴⁰⁴	Wood	15%	78.5%	42.3%	Total recycling and composting	55%	61.7%	64.6%	Total recycling, composting and energy recovery	60%	65.7%	72.7%
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Economic outcomes	The demand for PRNs is fixed at the start of each year (when producers report the quantity supplied) and the supply depends on the amount of recycling that takes place for each packaging material in that year. If there is not enough recycling taking place for a material then the PRN price increases as demand outstrips supply. As in any commodity market, PRN price increases encourage more suppliers to enter the market, collection and recycling rates increase																																				

³⁹⁹ Ibid.

⁴⁰⁰ PRN System Guide: Advisory Committee on Packaging, Task Force 2 – PRN Transparency, February 2016

⁴⁰¹ Government Review of Waste Policy in England: Department of Environment, Food and Rural Affairs, 2011

⁴⁰² Packaging and Environmental Legislation Factsheet: INCPen, March 2016

⁴⁰³ US Statistics on Waste: Government Statistical Department, Department for Environment, Food and Rural Affairs, December 15, 2015

⁴⁰⁴ The UK reports that about 32% of plastic packaging recovered in 2013 was from households.

United Kingdom Jurisdictional Scan

Topic	Element	Description																		
		<p>causing the price to decline.⁴⁰⁵</p> <p>Compliance with the EU Packaging Directive has been achieved at relatively low cost to obligated businesses that are required to ensure that a proportion of the packaging they place on the market is recycled.⁴⁰⁶</p> <p>The following graph illustrates the variability of expenditures by obligated parties on PRNs between 2007 and 2014.⁴⁰⁷</p> <div><p>Total PRN expenditure per year</p><table><thead><tr><th>Year</th><th>Expenditure (£)</th></tr></thead><tbody><tr><td>2007</td><td>40,000,000.00</td></tr><tr><td>2008</td><td>60,000,000.00</td></tr><tr><td>2009</td><td>85,000,000.00</td></tr><tr><td>2010</td><td>35,000,000.00</td></tr><tr><td>2011</td><td>25,000,000.00</td></tr><tr><td>2012</td><td>65,000,000.00</td></tr><tr><td>2013</td><td>110,000,000.00</td></tr><tr><td>2014</td><td>65,000,000.00</td></tr></tbody></table></div> <p>PRN costs are the cost per tonne of packaging collected for recycling/recovery, rather than the value of fees applied to the quantity of packaging supplied to the marketplace. The figures in the following table have been adjusted to show the equivalent cost per tonne of packaging put onto the market in 2014 (for purposes of comparison). As PRN will only be known at the end of 2014, the costs are presented as an estimated range.⁴⁰⁸</p>	Year	Expenditure (£)	2007	40,000,000.00	2008	60,000,000.00	2009	85,000,000.00	2010	35,000,000.00	2011	25,000,000.00	2012	65,000,000.00	2013	110,000,000.00	2014	65,000,000.00
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⁴⁰⁵ PRN System Guide: Advisory Committee on Packaging, Task Force 2 – PRN Transparency, February 2016

⁴⁰⁶ Government Review of Waste Policy in England: Department of Environment, Food and Rural Affairs, 2011

⁴⁰⁷ PRN System Guide: Advisory Committee on Packaging, Task Force 2 – PRN Transparency, February 2016

⁴⁰⁸ Participation Costs Overview 2014: Pro Europe, April 2014

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		<table><tr><th colspan="8">Estimated PRN Costs in 2014 Adjusted for Packaging Supplied € per tonne excluding VAT</th></tr><tr><th>Range</th><th>Paper</th><th>Glass</th><th>Steel</th><th>Aluminum</th><th>Plastics</th><th>Composites</th><th>Wood</th></tr><tr><td>Low</td><td>1.12</td><td>32.64</td><td>4.71</td><td>2.22</td><td>13.54</td><td>0.07</td><td>0.44</td></tr><tr><td>High</td><td>1.40</td><td>42.43</td><td>11.77</td><td>5.19</td><td>23.70</td><td>0.12</td><td>0.71</td></tr></table> <p>A requirement to report how PRNs and PERNs were spent was introduced in 2007 in an effort to address criticisms about the lack of transparency in the system. The following graph provides a breakdown of how PRNs were expended in 2014.⁴⁰⁹</p> <div><p>2014 PRN expenditure</p><table><thead><tr><th>Category</th><th>Percentage</th><th>Amount (£k)</th></tr></thead><tbody><tr><td>Infrastructure/capacity</td><td>31%</td><td>£19523k</td></tr><tr><td>Funding collection</td><td>28%</td><td>£17435k</td></tr><tr><td>Reduction in price and developing new markets for recycle</td><td>33%</td><td>£21245k</td></tr><tr><td>Retained for future investment</td><td>4%</td><td>£2753k</td></tr><tr><td>Costs of complying with the Regulations</td><td>1%</td><td>£842k</td></tr><tr><td>Developing communication strategies</td><td>3%</td><td>£2002k</td></tr></tbody></table></div>	Estimated PRN Costs in 2014 Adjusted for Packaging Supplied € per tonne excluding VAT								Range	Paper	Glass	Steel	Aluminum	Plastics	Composites	Wood	Low	1.12	32.64	4.71	2.22	13.54	0.07	0.44	High	1.40	42.43	11.77	5.19	23.70	0.12	0.71	Category	Percentage	Amount (£k)	Infrastructure/capacity	31%	£19523k	Funding collection	28%	£17435k	Reduction in price and developing new markets for recycle	33%	£21245k	Retained for future investment	4%	£2753k	Costs of complying with the Regulations	1%	£842k	Developing communication strategies	3%	£2002k
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	Perceived effectiveness within jurisdiction	While the collection, sorting and reprocessing infrastructure is well established for most materials, it is not sufficiently developed for plastics. Approximately 46% of plastic bottles were recycled in 2010, 92% of local authorities collect plastic bottles for recycling and clean film from																																																					

⁴⁰⁹ PRN System Guide: Advisory Committee on Packaging, Task Force 2 – PRN Transparency, February 2016

United Kingdom Jurisdictional Scan

Topic	Element	Description
		<p>commercial and industrial sources is readily recycled. Yet, overall, the UK only recycles 24% of its plastic packaging waste.⁴¹⁰</p> <p>PRNs and PERNs work to increase throughput to meet targets but their effect dissipates once targets have been achieved. Further increases in collection and recycling are unlikely without increased targets.⁴¹¹</p> <p>System does not target particular material sources, for example household packaging. Local governments are critical because the effect on household recycling rates and flow of funding from PRN is negligible.⁴¹²</p>
	Policy gaps and/or conflicts	<p>Producers and local authorities have raised concerns about the lack of transparency in how payments for PRNs and PERNs flow from reproprocessors and exporter to others in the system to increase collection and recycling.⁴¹³</p> <p>Payments for PRNs and PERNs provide a 'top-up' over market prices to incentivise reproprocessors to process sufficient material and, as such, do not cover the full costs of collecting, sorting and recycling packaging waste. This has the effect of sharing financial responsibility between producers and the final users of packaging (businesses, and local authorities on behalf of residents) and some argue that the sharing of costs should be rebalanced.⁴¹⁴</p>
	Are changes being considered	<p>The government has indicated it is considering new responsibility arrangements with the packaging supply chain in order to ensure that a greater proportion of the plastic packaging on the UK market can be easily recycled, increase participation rates by householders and small/medium enterprises and develop sorting and reprocessing capacity for non-bottle plastics.⁴¹⁵</p>

⁴¹⁰ Government Review of Waste Policy in England: Department of Environment, Food and Rural Affairs, 2011

⁴¹¹ PRN System Guide: Advisory Committee on Packaging, Task Force 2 – PRN Transparency, February 2016

⁴¹² Government Review of Waste Policy in England: Department of Environment, Food and Rural Affairs, 2011

⁴¹³ PRN System Guide: Advisory Committee on Packaging, Task Force 2 – PRN Transparency, February 2016

⁴¹⁴ Government Review of Waste Policy in England: Department of Environment, Food and Rural Affairs, 2011

⁴¹⁵ Ibid.

Competition under Extended Producer Responsibility in British Columbia (Phase 2)

Regulating for Environmental Effectiveness and Economic Efficiency

FINAL

16 April 2017

Usman A. Valiante

Senior Policy Analyst
Corporate Policy Group LLP
and

Chris Busuttil



Corporate Policy Group LLP

Reviewer's Note

Donald N. Dewees
Professor Emeritus of Economics and Law
Department of Economics
University of Toronto

April 9th 2017

I have reviewed this Report. I find that it is a useful analysis of the existing system of producer responsibility in British Columbia and of changes that might be considered to make that system more economically efficient.

Section 2 of the Report outlines why most economists believe that a competitive market is an efficient means of producing goods or services, meaning that it maximizes the combined well-being of producers and consumers in both a static and dynamic sense. It also explores the situations in which competition may not maximize welfare and the role of regulations that might nudge the economy back toward efficiency in the particular case of waste management. The potential role of an EPR system is discussed recognizing the special characteristics of market power, network effects and imperfect information that arise with waste management. This represents a good presentation of the economic principles that support a producer responsibility system and the tension between the facts and structure of the waste management sector and the assumptions underlying the economic principles.

Section 3 of the Report explains how EPR works in BC under the *Environmental Management Act* with particular focus on agency problems that arise with stewardship agencies and the important role that government regulations play in the EPR market. This is a mainstream analysis that most economists would support. Section 4 derives from the two preceding sections a set of recommendations for improving the efficiency and effectiveness of EPR in BC including both incremental changes and more substantial changes. These recommendations seem to me to flow logically from the preceding material.

Section 5 of the Report analyzes the market that exists for PPP in BC and the risks and benefits of injecting more competition into this EPR system including multi-family households and beer-related PPP. I am not familiar with the facts set out in this section but the analysis seems sound. The discussion of the means for monitoring, enforcement and reporting on the performance of the systems is important as this is an area that is essential to evaluating the field performance of the program but is often neglected in practice.

Section 6 discussed the best practices for introducing competition in EPR in the PPP category where the risk and benefit analysis suggests that it would enhance efficiency. This section takes a practical approach to applying the underlying economic principles to the hard practicalities of running a collection sorting and processing system. The conclusion notes that risks are low only when a set of contingencies is satisfied, a situation that is not assured. Vigilance and regulatory oversight will be necessary to minimize the risks and achieve the benefits that a working competitive system can achieve.



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Executive Summary

As a policy instrument Extended Producer Responsibility (EPR) seeks to reduce end-of-life environmental burdens of products and packaging by requiring producers to achieve set environmental performance standards for managing those burdens.

How policy makers regulate EPR determines how economically efficient the outcomes are – that is, how well costs to producers and consumers are minimized and environmental outcomes are achieved.

Environmental performance standards (e.g. recycling targets) play an important role in economic efficiency. Standards that are stringent enough to optimally reduce pollution and recover resources associated with end-of-life products and packaging induce producer demand for collection and recycling services. This demand drives recycling markets (and creates recycling markets where they do not exist) thus opening up opportunities for new entrants that compete to increase recycling while driving down costs to producers.

Overall, producers responding to EPR can drive efficiency through product redesign, the adoption of existing waste management best practices or by driving investment in new and innovative technologies and practices to reduce, collect, reuse and recycle wastes. Efficiencies may also be gained by collaboration/cooperation (“collaboration”) amongst producers that result in larger scale collection networks and recycling operations.

As such, competition and collaboration are both elements of achieving economic efficiency. Optimally, market participants are given the *economic freedom* to choose strategies and relationships that achieve the most efficient outcomes.

Inefficiencies can arise from EPR regulation. Improperly set, or poorly enforced performance standards contribute to weak recycling service markets and economic inefficiency. Policies that restrict, or provide market participants with incentives to lessen economic freedom (i.e. lessen competition or thwart emergent collaboration) also result in inefficiency.

In general, the potential for inefficiency increases where regulators implement EPR policies that prescribe ‘how’ producers achieve environmental performance standards rather than focusing on ‘what’ performance standards must be achieved.

There are a number of non-regulatory, administrative reforms to how the British Columbia Ministry of Environment (MOE) approves stewardship plans and administers oversight under the British Columbia Recycling Regulation that can enhance competition and improve economic efficiency.

Notable amongst these administrative reforms is improved data collection by the MOE to better inform the setting and oversight of performance standards, refocusing stewardship plans to describe how competitive markets will be harnessed to achieve EPR outcomes and ongoing MOE



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collaboration with the Competition Bureau Canada to educate BC EPR market participants about their responsibilities as competitors.

Competition related issues might arise where regulators wish to address broader economic or political considerations by specifying how producers or their agents will achieve certain performance objectives. In such cases additional regulation may be required to ensure efficient outcomes.

A case in point is the MOE's approval of the Multi-Material BC (MMBC) packaging and printed paper (PPP) steward plan which essentially requires MMBC to create a province-wide household collection network for PPP.

For any new PPP product stewardship agent to enter the market it is "essential" that it is able to access and support this household collection network. Thus this collection network becomes an "essential facility" for which the BC MOE must establish regulatory and supporting administrative rules of access in order to:

- Avoid disruption to household collection services;
- Provide multiple stewardship agencies with access to the collected materials necessary for compliance with performance obligations; and
- Ensure regulatory compliance by all stewardship agencies such that they can operate and fairly compete with one another and also so that the producer-members of those agencies can fairly compete.

These rules must either set out how collected materials will be physically apportioned to the various stewardship agencies or must set out rules about how stewardship agencies will share use of the common household collection network.



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“At the heart of the original vision for extended producer responsibility (EPR) was the desire for a policy strategy that could provide ongoing incentives for the incorporation of environmental concerns into the design of products. If producers were made responsible for end-of-life management (i.e., reuse, recycling, energy recovery, treatment, and/or final disposal) of products, they would find it in their self-interest to anticipate end-of-life costs and obligations and design their products to minimize those costs...

This vision also included other aspirations. One was that the resulting policy schemes would be dynamic—that is, as the product mix, production and processing technologies, or market and societal conditions changed, so too would the responses by the producers facing EPR requirements. Advocates of EPR hoped that when the task of meeting the goals of EPR was assigned to producers, business acumen would be mobilized to find the most clever and cost-effective means of reaching those goals, without detailed prescriptions by governments.”

Producer Responsibility at a Turning Point?
Reid Lifset and Thomas Lindhqvist

“By its nature, a regulation restricts an individual from doing what it otherwise would have done.”

Joseph E. Stiglitz¹

1. Introduction

As with virtually all regulation, EPR restricts producers’ freedom - in this case, the freedom to ignore the environmental and financial impacts of wastes associated with their products and packaging. However, in its original conception, EPR is an approach that also provides producers with unfettered discretion in choosing how to meet their responsibilities for addressing those impacts.

By its nature, EPR is performance-based regulation that “specifies required outcomes or objectives, rather than the means by which they must be achieved”². Performance-based environmental regulation demands careful consideration of how environmental objectives and

¹Chapter 1 *New Perspectives on Regulation* Edited by David Moss (Harvard Business School) and John Cisternino (The Tobin Project) ISBN:9780982478806

² “Performance-based regulation specifies required outcomes or objectives, rather than the means by which they must be achieved. Firms and individuals are able to choose the process by which they will comply with the law. This allows them to identify processes that are more efficient and lower cost in relation to their circumstances, and also promotes innovation and the adoption of new technology on a broader scale. The focus of regulation is shifted to results or outputs, rather than inputs, and the degree of government intervention in markets is effectively reduced.” *OECD Reviews of Regulatory Reform: Regulatory Policies In OECD Countries* – ISBN 92-64-19893-8 – OECD 2002

targets are drafted into law, how the outcomes are measured and evaluated, and how resources are allocated for its enforcement and oversight³.

EPR is also a market-based policy instrument. It assigns the end-of-life environmental and financial cost of products and packaging to producers. In an openly competitive market, this end-of-life cost becomes yet another cost of business providing producers with an incentive to reduce those costs through efficiency. Such efficiency may be gained through product redesign, the adoption of existing waste management best practices or through investment in new and innovative technologies and practices to reduce, collect, reuse and recycle producers' wastes.

Third party collection and recycling companies ("service providers") compete to provide producers with end-of-life management services and are typically engaged by producers to assist them in discharging their EPR obligations. Through the resulting transactions, efficiencies may be realized through new end-of-life management innovations.

The details drafted into EPR law, and the resources to support the law in its dual capacity as performance-based regulation and market-based policy instrument are critical determinants of the effectiveness of the law and the efficiency of its outcomes.

As it stands, EPR has rarely been implemented in its conceptually pure form. For various (and in some cases quite legitimate) reasons, EPR laws across many jurisdictions have incorporated policy prescriptions that have served to reduce producer discretion and fetter decision-making.

Where a government goes beyond prescribing 'what' environmental objectives producers must achieve to 'how' those objectives will be achieved (e.g. requiring producers to subscribe to a mandated producer responsibility organization – such as in Ontario under the *Waste Diversion Act* 2002 – or requiring producers to collect products and packaging using a specific collection method) the loss of discretion has observable effects on the producers themselves as well as on other parties with whom producers interact (e.g. service providers and consumers).

One of these effects is a loss of economic freedom – that is, a loss of the ability for market actors to be self-determinant in choosing their market relationships – that can manifest itself as change in the competitive dynamic between producers, between producers and collectors and recyclers that service them, and amongst service providers themselves.

British Columbia (BC) has been a leader in Canada with respect to the implementation of EPR through successive schedules of the BC Recycling Regulation under the *Environmental Management Act*. These schedules have designated beverage containers, residual products (i.e. pesticides, pharmaceuticals, lubricating oils, paints etc.), electronic and electrical equipment, tires and most recently, packaging and printed paper (PPP) for EPR.

³ Coglianese, C., Nash, J., Olmstead, T. 2002. *Performance Based Regulation: Prospects and Limitations in Health, Safety and Environmental Protection*. Regulatory Policy Program, Center for Business and Government. John F. Kennedy School of Government, Harvard University. Cambridge, MA, USA.

The purpose of this report is to present a framework for understanding the relationship between the legal rules under the BC Recycling Regulation and the effects on economic freedom with emphasis on market competition. This analysis is done in general and then in the specific context of the Schedule 5 PPP category with the ultimate objective of:

1. Identifying the legal and institutional best practices for introducing competition at various levels of the same product category with a view to greater economic efficiency; and
2. Assessing the risks and benefits associated with competition at various levels within the PPP category and identifying best practices for introducing competition at various levels within the PPP category again with a view to greater economic efficiency.

1.1. Structure of this report

This report is structured in the following manner:

- **Section 2** defines the term market, discusses the role of regulation in shaping markets and discusses situations where the markets fail to realize their full potential to improve society's wellbeing. Section 2 provides a frame of reference for the rest of the report by which the reader can understand how producers compete and collaborate in markets and problems that arise from productive and consumptive activities (i.e. market failures). We follow by discussing the role of regulation in addressing market failure (such as waste associated with products and packaging) and then explore the essential role of competition in EPR stressing the importance of regulatory design in order to avoid policy-induced market failures (such as unintended restrictions on competition).
- **Section 3** describes the features of the BC Recycling Regulation under the *Environmental Management Act* as they affect producer behaviour and the implications for the competitive dynamic and economic efficiency of producer, service provider and consumer markets in British Columbia.
- **Section 4** provides general recommendations for actions that can be taken to make EPR more efficient in British Columbia under the BC Recycling Regulation. This section addresses the key study objective of identifying the legal and institutional best practices for introducing competition at various levels of the same product category with a view to greater economic efficiency.
- **Section 5** provides a description of how EPR for PPP has unfolded in British Columbia (BC) as a product of the requirements of the *Environmental Management Act*, Recycling Regulation and the policy objectives of the Ministry of Environment (MOE) as reflected in approved stewardship plans for PPP. It provides context to section 6.
- **Section 6** Addresses the second deliverable of this report – that is, assessing the risks and benefits associated with competition at various levels within the PPP category and identifying best practices for introducing competition at various levels of the PPP category.

2. Markets and market failure

Before discussing the effect of EPR regulation on competition, it is important to expand upon the idea that laws are the key to defining and shaping markets and that legal rules such as EPR can have profound impacts on the relationships and dynamics in those markets.

2.1. What is a market?

Markets are institutions of exchange. They comprise buyers and sellers and both the legal rules and the system (i.e. government) for making and enforcing the legal rules and private contracts that govern those exchanges. Cultural norms and business conventions (such as aversion to corporate reputational risk) are also characteristics of institutions of exchange and they serve to informally regulate the behavior of buyers and sellers.

A market economy is characterized by the unrestricted (often referred to as free) exchange of goods and services between buyers and sellers (or consumers and producers). In a free market, businesses can offer their goods and services at prices they deem acceptable. Consumers make consumption decisions based on information available, a comparison of available choices, income constraints and personal preferences. Ultimately the market interaction between suppliers and consumers establishes prices, quantities, quality and product choice.

In theory, in markets where there is a freedom of entry and exit and open information there is little need for additional rules to govern the market. Such a market maximizes the joint welfare of producers and consumers⁴. However, in imperfect markets where there are natural or regulatory barriers to entry, non-defined property rights, externalities and information asymmetries, government intervention or oversight is usually required to maximise joint welfare. Insufficient regulation and oversight of that regulation is one reason markets fail (we discuss other sources of market failure in detail further on). It has been noted that “generating more competition usually requires more regulation”⁵.

For example, the US economic meltdown of 2008 as characterized in the book (and movie) *The Big Short* is really a story of regulatory failure. The crisis began with competition between financial institutions to create and sell new financial products made up of bundled securitized “subprime” mortgages⁶. Those products were sold despite the fact that they either lost or

⁴ Increased producer and consumer welfare means that the parties are better off than had they not traded; that is, both have derived value from the transaction. Overall welfare is increased when such transactions make society as a whole better off than had those transactions not occurred.

⁵ “The process of liberalization [freeing markets] consists of increasing regulations that enhance competition, such as antitrust rules, and removing regulations that impede it, such as price and entry restrictions. Yet the story does not end there: policies that enhance competition are almost always accompanied by corollary regulations designed to facilitate the competition (as with financial disclosure requirements), protect society from negative side effects (as with environmental regulations), or compensate the potential losers from these policies (as with welfare policies).”
Vogel, S. 2007 *Why Freer Markets Need More Rules*. In *Creating Competitive Markets: The Politics of Regulatory Reform*. Brookings Institution Press. Washington, D.C.

⁶ “In the mid-2000s, competition between mortgage securitizers for loans led to deteriorating mortgage underwriting standards and a race to the bottom that ended in the late 2000s financial crisis. Underwriting prevents losses at the front

concealed important information (describes as an “information asymmetry”) about the risk associated with individual mortgages. When the mortgages failed, the market failed resulting in catastrophic financial loss. In this case, properly enforced regulations requiring the disclosure of the underlying risk associated with the mortgages comprising the financial products could have avoided such market failure.

Information is critical to efficient markets. Markets are coordinated by price, which is an expression of the value that buyers and sellers place on goods and services. The value buyers place on goods and services is heavily influenced by the information they have about those goods and services as provided by sellers and competing suppliers (and verified through other sources of market information). The better informed a buyer, the greater the buyer’s ability to assess value as expressed as price. The economist’s perfectly competitive market assumes homogeneous goods and perfect information.

Producers must anticipate demand for their products both in terms of what consumers want and in terms of what their competitors are supplying. This information also comes to producers via prices – that is the change in demand for their products relative to the prices they and their competitors are charging. Prices signal to producers how to act – to balance their supply with demand (i.e. avoid wasted surplus production) or to innovate in order to avoid stagnation. In a truly competitive market, individual producers are “price takers”, that is they must react to the competitive alternatives in the market by meeting the prevailing prices rather than establishing the price.

Well-functioning markets allocate resources efficiently meaning that costs are minimized and resources are directed to their highest-value uses. As such, they produce goods at least cost (“static efficiency”), produce goods in quantities that match consumer demand (“allocative efficiency”) and continuously develop new goods and production processes (“dynamic efficiency” or, simply, innovation). Well-functioning competitive markets are typically characterized by a lack of significant market power (the ability for a firm or group of firms to raise prices above those resulting from competition) and easy entry into and exit from the market⁷.

end by basing loan approval decisions and lending terms on data-driven predictions of the likelihood of default, or failure to repay, and the severity of losses to lenders in the event of default. Loose underwriting involves making loans that are likely to default.” Simkovic, Michael, 2011. *Competition and Crisis in Mortgage Securitization*. Indiana Law Journal, Vol. 88, p.213, (2013). Available at SSRN: <http://ssrn.com/abstract=1924831> or <http://dx.doi.org/10.2139/ssrn.1924831>

⁷ “Sunk costs generate earnings that would be lost if a firm exits the market; in this sense, sunk costs are exit barriers. Exit barriers can affect entry by influencing the incentives of incumbents. If incumbents cannot exit without considerable losses, then their threats of aggressive post- entry behavior are more credible, which deters entry and earns them higher profit. Thus, exit barriers for incumbents create entry barriers.” McAfee, R.P., Mialon, H., and Williams, W. 2004. *What is a barrier to entry?* American Economic Review. 94: 461-465. Available at: <http://authors.library.caltech.edu/11284/1/MCAer04.pdf>

Where producers bear the costs specific to the environmental and financial burdens posed by their products at end-of-life, those prices provide information to producers about whether they need to change the design of their products or improve the end-of-life management systems handling those products. Where those costs are not borne by producers the incentive to reduce cost that Lifset-Lindhqvist describe in the opening quote of this report is lost and the impetus for environmental innovation is reduced.

As such, under EPR the economic efficiency objective is to reuse and recycle the resources in products and packaging at least cost (static efficiency), meet regulated environmental targets (allocative efficiency) and drive innovation both in the production of products and packaging and in the methods by which products and packaging are reused and recycled. This is what we mean throughout this report when we refer to economic efficiency or efficiency.

We discuss why efficient markets are more likely to result when buyers and sellers are able to freely associate as competitors or collaborators (and in some cases both) next.

2.2. Economic freedom: Free association, competition and collaboration

Competition in markets arises when buyers and sellers engage in an exchange and sellers compete with each other to provide buyers with goods and services.

Where goods are standardized commodities (such as peanuts), competition may be largely on price with little differentiation between products. Normally price variations are based on transportation or processing costs and the state of competition in the local market (e.g. the number and proximity of peanut vendors).

A new and innovative manufactured or value-added good may face limited or no competition for a period of time. Restrictions in competition can be institutionalized through the issuance of patents that give the innovator exclusive market power – that is, the ability to set and maintain a price above the level that would prevail under competition – over the product or process for a specified period of time to allow the innovator to recoup the costs associated with developing the innovation. The market power associated with patents serves as a tremendous incentive to innovate. It allows the innovator the opportunity to charge higher than competitive prices (think of the Blackberry phone when it was first introduced).

Over time, despite these patents, new market entrants arrive with their own innovations and/or market laggards catch up or pass the original innovator (think of Apple entering the market) and what was once a novel innovation becomes a commodity. A new round of innovation (say by Samsung) then allows another burst of profitability for the new innovator with a subsequent response by competitors. As a result consumers benefit from competition as it delivers both new

innovation and decreasing costs for past innovations while producers reap profits as a reward for innovation and cost reduction⁸.

In some cases innovation wipes out existing competitors⁹ by creating wholly new markets (e.g. smartphones have displaced landline phones, film photography, fax machines, phone books, portable music players, printed maps etc.).

In competitive markets, failure is a matter of a lack of competitiveness not a matter of fairness. Where anticompetitive behaviour occurs, competition laws provide remedial relief to victims of anti-competitive activities (see Section 2.3).

Innovation is at the heart of the emerging concept of a circular economy, which aspires to systems of production and consumption that produce no waste by recirculating materials back into ecosystems (as biological nutrients) or back into production (as technical nutrients). The emergence of such an economy could make many recycling systems, as we know them today, obsolete¹⁰.

Scale – size and capacity – provides sufficient financial resources to undertake research and development and thus drives innovation. “Scale” is also important for reducing cost and bringing innovative practices to bear. For example the sophisticated systems that can be economically brought to bear to recycle 200,000 tonnes of a given material will be different than what can be justified to recycle 1,000 tonnes of the same material. In some cases, economies of scale can only be achieved when competitors collaborate either directly or via commercial intermediaries (such as Producer Responsibility Organizations or Stewardship Agencies).

As an example of competitors collaborating for scale, Apple and Samsung are intense competitors in the smartphone market yet Samsung is also the largest supplier of microprocessors used in Apple iPhones. This collaboration allows both Samsung and Apple to realize lower costs associated with scale manufacturing while maintaining aggressive competition for smartphone consumers based on proprietary features and designs.

⁸ Rapid product cycles without a means to reincorporate the materials associated with newly obsolete devices results in waste – an unpriced cost of production known as a negative externality (as discussed in the next section).

⁹ Capitalism “is by nature a form or method of economic change and not only never is but never can be stationary... The fundamental impulse that sets and keeps the capitalist engine in motion comes from the new consumers’ goods, the new methods of production or transportation, the new markets, the new forms of industrial organization that capitalist enterprise creates. [Capitalism requires] ...the perennial gale of Creative Destruction.” [Schumpeter, Joseph A.](#) (1994) [1942]. *Capitalism, Socialism and Democracy*. London: Routledge. pp. 82–83. ISBN 978-0-415-10762-4.

¹⁰ As an example, the Phillips lighting company’s approach to providing lighting as a service rather than a product means their fixtures are managed in a closed-loop producer driven refurbish and reuse system such that fixtures, “..last 75% longer than other conventional fixtures as the design of the fixtures improved the serviceability and therefore improved the lifetime. In addition, the fixture components can be individually replaced. This will reduce maintenance costs and means that the entire fixture does not have to be recycled, resulting in the greatest possible reduction in raw material consumption.” See: <http://www.philips.com/a-w/about/news/archive/standard/news/press/2015/20150416-Philips-provides-Light-as-a-Service-to-Schiphol-Airport.html>

Network effects arise from a network becoming more useful (and valuable) as more people connect to it. The Internet has created a myriad of services that are built on the basis of the network effects. For example, email or Facebook or Uber becomes more useful to individual users as a larger fraction of the population uses email or Facebook or Uber. In turn Facebook and Uber become more profitable to their owners as more users sign on to their services. This increasing benefit to network-based application providers and application users is known as ‘two-sided’ network effects.

In many cases collection also benefits from scale and two-sided network effects: consumers participating in a well-resourced and functioning collection network supported by many producers benefit from lower collection and transaction costs (in the form of convenience and simplicity of participation) while producers benefit from economies of scale afforded by a collection network that has the participation of many consumers. Network effects thus benefit both producers and consumers. As a unique example discussed in detail in Section 6, the curb-side collection of PPP from households may be most efficiently achieved through a single collection system as a “natural monopoly”¹¹.

In most cases, it is unnecessary to preclude competition to gain network and scale efficiencies. In general, open and unfettered markets offer freedom for participants to choose their associations and relationships – the freedom of choice for producers to compete or to collaborate/cooperate with other producers or some combination thereof. The relationships that form are often novel and unpredictable by anyone observing the market from the periphery. Realizing the full potential of competition, collaboration, scale, network effects and exchanges of information critical to buyers and sellers requires preserving this freedom as much as possible.

However, even competitive markets do not of themselves always achieve an efficient allocation of resources and when they fail to do this it is referred to as a “market failure” which we discuss next.

2.3. Market failure¹²

Market failures are distortions of the market that lead to inefficiency. Referring back to the discussion of efficient markets in section 2.1, an inefficient market is one where costs have not been minimized (perhaps because costs such as pollution properly borne by the transacting parties are borne by others) and resources are not directed to their highest-value uses. As a result, welfare is not maximized and society at large is not better off from the market exchanges between buyers and sellers.

¹¹ “Kerbside collection of waste from households is usually a local natural monopoly in OECD countries. A natural monopoly is a market where the conditions of cost and demand imply it is cheaper for one entity, rather than two or more, to supply the market.” *Extended Producer Responsibility - Updated Guidance, Working Party on Resource Productivity and Waste*, OECD April 2016. ENV/EPOC/WPRPW(2015)16/FINAL

¹² For a focused and concise treatment of market failure and regulation see Stiglitz, Joseph E., 2008 *Government Failure vs. Market Failure: Principles of Regulation*. Columbia University Academic Commons.

The sources of market failure are discussed below.

Monopoly

An example of a market failure is a monopoly with market power that allows it to maximize profit by restricting supply and setting higher than competitive prices. The lack of competition means that no one is providing competing goods or services that would normally discipline this pricing behavior. Monopolies lead to suboptimal product quality, choice and quantity at prices in excess of competitive levels. The cost that monopoly imposes on the economy is often referred to by economists as a dead weight loss. The dead weight loss is the sum of losses to both consumers and producers that results from the lack of competition. It is a loss to all of society and is often referred to as a total welfare loss.

In some cases, monopoly emerges when the costs to build the necessary infrastructure to deliver a product are very high (e.g. an electric power transmission network connecting power producers to individual consumers), the cost of delivering the product remains largely fixed irrespective of how many or few units are delivered (e.g. delivering 1,000 kWh versus 1,000 GWh) and the added cost to deliver one additional unit of product is very low. In this case the barriers to entry for a competitor are very high and the monopolist's prices cannot be held in check by competition.

To ensure such natural monopolies do not simply charge whatever they want, governments regulate to establish access for users to the monopoly "essential facility"¹³, levels of service and product choice the monopolist will provide and, in the case of utilities, the rates consumers will pay for those services. The concept of essential facility will figure prominently later in this report when we discuss how competing producer responsibility organizations (PRO) might gain access to PPP collected through a common household collection system.

Alternatively, where competition is reduced by the creation of a de facto monopoly through collusion by competitors or the abuse of market power, competition laws address such behavior. The Competition Act (Canada) prohibits competitors from conspiring to fix product prices or allocate sales, territories, customers or markets for the production or supply of products¹⁴. There are also provisions that prevent mergers between competitors that would result in an unacceptable lessening or prevention of competition and provisions that prevent those with legitimately obtained market power from abusing it to the detriment of competition. These provisions are relevant to how producers and recycling service providers conduct themselves in responding to EPR regulations.

¹³ An essential facility is a facility that is essential for more than one party to have access to that cannot be easily duplicated. As discussed further on in this report, where curbside collection for PPP operates as a natural monopoly, it is essential for all producers to have access to that common collection system in order to discharge their EPR obligations. Also see Ref. 36.

¹⁴ Competition Act (R.S.C., 1985, c. C-34) Retrieved from: <http://laws-lois.justice.gc.ca/eng/acts/c-34/page-11.html#docCont>

Externalities

Externalities lead to unintended effects on the economy (positive or negative) that are the consequence of economic activity.

A positive externality occurs where the economic actions of one group benefit another. A good example is the bee-keeper who locates his bees next to an apple orchard. The bees collect pollen to make honey but in doing so also cross pollinate the apple trees allowing the trees to bear fruit.

Negative externalities are another kind of market failure. While externalities occur as a natural consequence of economic activity, the harm or benefits they create often go unchecked because there is no assigned property right being infringed upon (for example, no one party owns a river that might be receiving pollution¹⁵) that allows the externality to then be ‘internalized’. The financial and environmental cost of disposing of end-of-life waste from products and packaging, or smartphones made obsolete (and thus waste) by the short product cycle described earlier are examples of externalities.

Pollution and waste is the consequence of the production or consumption of goods. The victims of pollution are often dispersed and individually have no effective property rights to seek compensation from the polluter. In these cases the state has to act on behalf of its citizens to address the costs of pollution and “internalize” the externality.

If the negative externality goes unchecked, these costs are avoided by the culprits and passed on to others. In essence when a producer of a good imposes negative externalities (such as waste or pollution) and is not held accountable for these costs its products are being subsidized by others with the result that too much of the polluting good is produced, imposing a cost on an economy and contributing to allocative inefficiency.

Poor information

Another type of market failure is where one party to a transaction has poor information or more information than the other party (“information asymmetry”) leading to a “bad deal” for one of the parties. For example, consider a producer under EPR who needs recycling services but lacks information on what to look for when undertaking due diligence of prospective recyclers¹⁶. The producer enters into an agreement with a recycler who appears to be able to collect and recycle materials to a given standard only to learn later (perhaps from the regulator) that its materials were improperly managed¹⁷.

¹⁵ Hardin, Garrett December 1968. *The Tragedy of the Commons* Science 13 Dec 1968: Vol. 162, Issue 3859, pp. 1243-1248 DOI: 10.1126/science.162.3859.1243

¹⁶ This is known as “adverse selection” – the producer would chose more rigorous contract terms if it was knowledgeable about the risks associated with purchasing services from the recycling sector.

¹⁷ This is known as “moral hazard” – the recycler will take a risk on managing materials to reduce its cost knowing that the producer bears the liability for any mismanagement. Also see Ref. 40

Here governments can improve recycling market functioning by either setting regulated performance standards or requiring recycling service providers to adhere to standards¹⁸ as a condition of providing services to producers discharging EPR obligations. The additional benefit of setting such standards in regulation is that it sets competition amongst service providers on a common standard thus affording producers (especially smaller less sophisticated ones) some certainty that pricing does not involve cost cutting through less diligent practices.

Policy-induced market failure

While governments enact policies to reduce or eliminate harm or third party costs associated with the production and consumption of goods (e.g. product safety laws, labour laws, labeling requirements, environmental laws etc.), they too can be a source of market failure/distortions.

It is here that the MOE can do much to foster economic efficiency and many of the recommendations in this report focus on rulemaking and rule enforcement towards this end.

Laws can overtly shield market incumbents from innovative market entrants. As an example, the overt refusal or prohibitive licensing requirements that prevent application-based ride hailing to compete with conventional taxis¹⁹ effectively entrenches taxi services, stifles competition, effectively raises taxi prices above what they would be in a more competitive market²⁰ and blocks innovation that can transform personal transportation²¹.

Similarly, unduly complex regulatory approval processes or the regulator's incapacity to deliver timely approvals can pose barriers to entry, effectively giving incumbent market players market power they would not have otherwise. As an example, slow and complex Federal Drug Administration approvals of competing EpiPen injectors has been cited as a major contributing factor to allowing the EpiPen market incumbent to raise prices by 600%²².

¹⁸ As an example, by 2017 *The e-Stewards® Standard for Responsible Recycling and Reuse of Electronic Equipment*® will be the most stringent e-waste recycling standard in the world. It “is a comprehensive set of performance requirements created specifically for the electronics recycling and asset recovery industries, set into the framework of the global environmental management system standard known as ISO 14001.”

¹⁹ Competition Bureau: *Modernizing Regulation in The Canadian Taxi Industry* November 26, 2015
<http://www.competitionbureau.gc.ca/eic/site/cb-B.C..nsf/eng/04007.html>

²⁰ Economic effects of ridesharing in Australia 2016 Deloitte
<https://www2.deloitte.com/content/dam/Deloitte/au/Documents/Economics/deloitte-au-economic-effects-ridesharing-australia-010216.pdf>

²¹ *Uberworld: The world's most valuable startup is leading the race to transform the future of transport*. The Economist. September 3rd 2016

²² “Eventually exorbitant prices will draw other competitors to the market and prices will come down, or so goes the thinking of basic supply and demand. But, FDA regulations – if unduly onerous – could continue to create long delays, resulting in higher prices and loss of access to some of these medications. It may be time for the FDA to reconsider some of its regulations governing these well-known, generic drugs to reduce the cost of approval and to facilitate competition. For example, the FDA may need to consider some sort of accelerated approval for importing drugs already sold in countries with regulatory systems comparable to our own. In that way, competition for these unpatented drugs could return more quickly.” *The real reason the EpiPen and other off-patents are so expensive* Timothy Holbrook, Professor of Law, Emory University. The Conversation. <http://theconversation.com/the-real-reason-the-epipen-and-other-off-patents-are-so-expensive-64346>

Laws designed with a particular objective in mind can have unintended negative consequences if due consideration to competition in those markets is ignored. As an example, where governments mandate²³ or facilitate producer collectives (“agents”) for the purpose of EPR (perhaps to make it easier to regulate one producer agent rather than many producers²⁴), the agent might engage in a number of activities that reduce economic efficiency.

These include attempts by agents to protect their dominant position and block new entrants through activities that are anti-competitive abuses of this market power²⁵, to set eco-fees and coordinate remittance directly from the point of sale once collected from consumers²⁶ (thus shielding producers from financial liability), to use its monopsony market-power to engage in procurement practices that adversely affect service provider markets²⁷, and to attenuate collection and recycling rates through recycling supply chain management to keep program costs low or control the flow of reused products and recycled materials so they do not compete with producers’ products and materials.

The economic efficiency issues associated with agency figures prominently in our discussion of EPR under the *Environmental Management Act* in section 3.

Laws can also have unintended effects such that a law designed to address a market failure in one market then creates market failures in unrelated markets. As an example, a mandate for compact fluorescent lamps to reduce energy use associated with lighting has had the unintended effect of driving a lighting technology that results in mercury-containing lamps requiring special management at end-of-life.

Similarly, setting recycling targets for products or materials under EPR without a clear definition of reuse and recycling could result in producers selecting cheaper but environmentally less

²³ Notably, Industry Funding Organizations under Ontario’s *Waste Diversion Act 2002*.

²⁴ The incentive for government to put such provisions into law may be regulatory expediency. “Ease of regulatory oversight is another argument made in favour of monopoly PROs. Regulators incur higher costs to award multiple licenses, monitor data from multiple sources, and hold multiple PROs to account, it is argued. Regulators may therefore prefer to deal with only a single entity.” Ibid. Ref. 11

²⁵ “Competition in PRO markets can be suppressed by difficult conditions of entry by rival PROs. Some of these may be structural, but others may be strategic, entry being made more difficult by the conduct of incumbent PROs. Competition investigations have identified long-term exclusive contracts with waste collectors as raising barriers to entry.” Ibid. Ref. 11.

²⁶ Canadian waste electronic and electrical equipment stewardship programs incorporate a mechanism to transfer the financial responsibility for remitting environmental handling fees (EHF) from the producer to a retailer via a “Remitter’s Agreement”. As an example, under Ontario Remitter’s Agreements: “A Manufacturer/Brand Owner sells a product to a Distributor who then sells it to a Retailer. If the Retailer wishes to remit fees on behalf of the Manufacturer, the following must be in effect:

1. The Steward – in this case the Manufacturer/Brand Owner-must have a Remitter’s Agreement with the Distributor (the Remitter)

2. The Distributor(remitter) must have a Sub-Remitter’s Agreement with the Retailer (Sub-Remitter).”

<http://ontarioelectronicstewardship.ca/stewards/remitter-or-sub-remitter/>

²⁷ Monopsony, or single buyers (typically the case of single PRO that procures services), generates analogous efficiency problems. Compared to a situation where they could negotiate with a number of potential buyers, suppliers facing a single buyer must accept the offered terms. In the extreme, monopsony low prices can lead to suppliers exiting the market. Ibid. Ref. 11

preferable recycling practices thus depriving markets that could make better environmental use of those products and materials (and eliminating innovative players in those markets).

Market failure can arise in setting environmental targets (e.g. collection or recycling targets) that are not sufficiently stringent to deal with the externalities at hand. This has the effect of insufficiently incentivizing producers to undertake meaningful end-of-life collection and recycling efforts. As such, low stringency entrenches low performing collection and recycling systems that thwart the innovative dynamic resulting from new market exchanges that would arise to meet more aggressive environmental targets. This depresses investment in environmental protection, which in the case of recycling may end up squeezing out service providers that have invested against discharging producers' EPR obligations.

A similar situation arises when environmental targets are meaningful but governments fail to enforce those targets uniformly. Under EPR where there is insufficient regulatory oversight, freeriding (i.e. when one firm or individual benefits from the actions and efforts of another without paying or sharing the costs²⁸) will arise, distorting the competitive dynamic between producers that are compliant and those that are not. Freeriding has a similar effect as targets that are too low – it depresses demand for recycling services and undermines economies of scale in recycling markets.

Distinguishing true market failure

It is important to distinguish true market failure from markets that may appear to be less than competitive but are efficient nonetheless.

Where markets are subject to significant economies of scale, scope or network effects, there is a natural tendency for the market to evolve into a small number of producers. This is not inconsistent with allocative efficiency as the nature of scale economies generally favors fewer producers with larger outputs. These markets may look suspect but require careful assessment before judgment is passed about their economic effect. The cost savings from economies of scale may outweigh the price increases from market power. But they may not outweigh them, which is why careful assessment is required.

As discussed above in regard to network efficiencies and economies of scale, there are also situations where governments require a universal level of service delivery and allow a provider of such service to have a government-sanctioned monopoly (postal service or an electric power distribution utility) thereby creating a structural barrier to new entrants. Here again, regulation can help to ensure that other social policy objectives are being met (reasonable prices, fair access to services, health and safety, internalizing any negative externalities etc.).

Much of public policy is dedicated to addressing market failures. Ideally, public policy drives a new balance where the distortion is addressed and producers deliver the same (or better) goods,

²⁸ OECD Glossary of Statistical Terms website: <http://stats.oecd.org/glossary/detail.asp?ID=3222>

more cheaply, in the right amounts to the right consumers through new and innovative production and/or end-of-life management processes.

Ideal public policy is rare. Good policy seeks to achieve economic efficiency by preserving economic freedom that promotes competition and collaboration. It aims to address unwanted market distortions without creating new ones.

In the next section we analyze the features of the Recycling Regulation under the *Environmental Management Act* (EMA) as they affect producer decisions and the resulting competitive dynamic and economic efficiency in producer, service provider and consumer markets.

Based on this analysis we make practical recommendations for addressing competition issues as they arise under the *Environmental Management Act* and Recycling Regulation in section 4.1.

3. EPR under the *Environmental Management Act*

This section provides an analysis of the competitive dynamic and risks to economic efficiency in producer, service provider and consumer markets under the *Environmental Management Act*.

The *Environmental Management Act* 2003 (the “Act”) is British Columbia’s omnibus legislation for the “management, protection and enhancement of the environment”. It enables the Minister to develop regulations for EPR and to enforce compliance with the Act and its regulations and prosecute offences under the Act.

Under the EMA, EPR is regulated under BC Regulation 449/2004 (“Recycling Regulation”) that sets out a regulatory approach to EPR. This approach deviates from the Lifset-Lindqvist conception of EPR (as described in the opening quote of this report, or what we refer to as “pure-form” EPR) in several critical ways.

3.1. The transfer of legal liability from producers to stewardship agencies

As performance-based regulation the pure-form approach to EPR is solely focused on achievement of regulated environmental outcomes without any regulation of the processes or conditions by which producers achieve those outcomes.

Accordingly, producers can discharge their regulatory obligations by establishing a collection and processing supply chain individually or in collaboration with one another (thus availing themselves of the potential benefits of network efficiencies, scale, and buying power associated with the high volumes of recycling service they need to purchase).

Such producer collaborations may be through agreements amongst producers or through formation of third party agents – producer responsibility organizations (PROs) or stewardship

agencies²⁹ – that act on behalf of the convening producers. In pure-form EPR, agents are not regulated in any way and their ability to set prices to producers is the subject of commercial agreement without regulatory controls. More than one producer collaboration can emerge with the resulting collectives competing amongst themselves.

This is not exactly the case under the Recycling Regulation and the difference in the treatment of how producers bear liability significantly affects their competitive behaviour.

Under section 2 “Duty of producer” of the Recycling Regulation, the producer is responsible for having an approved product Stewardship Plan (section 2(1)(a)) that has met the criteria for approval of a product stewardship plan under section 5 of the Recycling Regulation. Should the producer choose not to submit a stewardship plan for approval by the Director, the producer (other than a producer of beverage containers and packaging and printed paper) becomes subject to default rules under Part 3 (Product Stewardship Program Requirements if No Product Stewardship Plan).

Section 2(2) provides for the producer appointing “an agency to carry out duties of the producer under Part 2 [Product Stewardship Plans] on behalf of the producer”. Section 2(3)(b) then requires that the agency to comply with 2(1)(a) which requires that “a producer must have an approved plan under Part 2 [*Extended Producer Responsibility Plans*] and comply with the approved plan” before the agency “begins to carry out the duties of the producer”.

Section 2(5) sets out the requirements for the agency to notify the producer should the agency be charged (subsection b) or convicted (subsection c) for offences under section 16³⁰.

It is common practise that a sub-set of producers convenes a stewardship agency to which producers at large subscribe. The agency then develops the stewardship plan, seeks approval for it and once the plan is approved, operates the ensuing program while responding to the Ministry’s procedures, reporting requirements and queries.

Accordingly, this common practise seems to have caused producers to misconstrue the requirements of the BC Recycling Regulation: producers behave in a manner that presumes that once they have appointed a stewardship agency, it is the agency that is legally liable for submitting a stewardship plan for the Director’s approval, for meeting the obligations set forth in the approved plan, and bearing penalties for any offences arising from failures thereof³¹.

There is no clarifying common law jurisprudence regarding these key provisions of the BC Recycling Regulation³².

²⁹ The terms PRO, stewardship agency and agency are used interchangeably in this document.

³⁰ Section 2(5) contemplates agencies being charged with offences and having to notify producers, but this is only relevant in relation to non-compliance with section 2(3).

³¹ The MOE’s *Recycling Regulation Guide* states that, “the producers remain the obligated party regardless of the agency structure”.

³² To date, no individual producer or stewardship agency has been prosecuted for non-compliance.

Where a rational producer seeks to avoid unnecessary risk, the perceived ability to transfer liability from oneself to a third party agent provides a powerful inducement to seek an agent. Not only does this perception of liability transfer to a stewardship agency reduce perceived risk of prosecution for offences but it also provides no incentive for producers to maintain the technical expertise necessary to understand the practical realities of collecting and recycling its products or monitor its PRO/agency³³.

While there may be very good reasons why producers may choose agency over individual effort (such as economies of scale and network efficiencies), that decision should not be driven by the perception that liability is being assigned to a stewardship agency.

Whether real or perceived, the agent's primary value to producers becomes the assumption of liability, not environmental performance. Where producers remain liable for environmental outcomes they have a vested interest in ensuring their agents remain diligent in discharging their obligations. In turn, agents must operate cost effectively and diligently lest producers seek other options to discharge their obligations.

Real or perceived liability transfers incentivize agency and poses a disincentive to individual compliance thus reducing opportunities for individual producer and multiple producer responsibility organization (PRO) competition that might otherwise occur. Moreover, facilitating agency creates greater opportunities for the types of abuse of dominance described under policy-induced market failure in the previous section. This is especially true where government sanctions the compliance activities that agents undertake, as discussed next.

3.2. Stewardship agencies and stewardship plans

Stewardship plans as a proxy for regulation

As performance-based regulation EPR sets out uniform requirements for all producers of a given product category without regulation of the processes, practices or conditions by which producers achieve those outcomes.

In contrast, the Recycling Regulation requires producers (in practice, typically stewardship agencies) to propose a plan for how they will come into compliance with the requirements of the Recycling Regulation and for undertaking any additional considerations (also specified in the Regulation) that the Director may take into account in approving the plan.

³³ Ensuring producers understand that they are liable is critical for ensuring diligent behavior amongst producers and the attendant integrity of EPR as a performance-based policy mechanism. Lindqvist T (*In Extended Producer Responsibility in Cleaner Production*. Lund University, 2000) identifies four forms of producer responsibility for a given product under EPR: Liability for proven environmental damages, economic responsibility for costs associated with end-of-life management, physical responsibility for the system to manage the product, and informative responsibility for providing information associated with its product.

The approval of stewardship plans has a significant impact on producer behaviour and the ensuing market dynamic including competition, and thus, economic efficiency.

Once approved by the Director, a stewardship plan sets out the requirements that the producers covered by the plan (or the agency on their behalf) will follow to remain compliant with the Regulation.

Under the Recycling Regulation, any subsequent stewardship plan for a given product may be required to consider “the product stewardship programs of other producers for products in the same product category” (section 5(2)(l)) and “the structure of financial and operational co-operation with other producers” (section 5(2)(m)).

An approved stewardship plan is itself a form of regulation. As such, the first approved stewardship plan for a given designated Product Category can set a regulatory precedent for that Product Category that can then affect the approval and operation of all subsequent plans for the same product.

The Director’s discretion to require that proponents of subsequent stewardship plans for a given designated Product Category be required to consider incumbent programs, means that a new entrant with comparatively weak economies of scale and market position could face a potentially high cost of entry – a “structural barrier”. This is especially true when the incumbent’s stewardship plan involves establishing a province-wide collection network that the new entrant may be required to duplicate^{34,35}.

An effect of these regulatory provisions has been that the Director becomes, in essence, a custodian for the incumbent, requiring every new entrant to come to terms with the first and vetting subsequent stewardship plans against that of the incumbent’s. This is in sharp contrast to the free market where new entrants not only do not consult with competitors before entering a market but are also prohibited by competition law from doing so.

A new entrant arriving after the incumbent stewardship agency has been operating under an approved stewardship plan for a period may also face strategic barriers to entry. Key points of collection operating under commercial agreements with the incumbent agency may be

³⁴ A retailer that is also a producer (i.e. a brand-owner or first importer) may face fewer barriers if it is able to use its retail stores as collection locations to which consumers can bring materials and forgo the need to establish another drop-off collection network.

³⁵ “An obligation to enter a market nationwide increases sunk costs if the best entry strategy absent the obligation would be to enter at small scale in a limited area. A universal service obligation is often imposed to prevent new entrants from “cherry picking” the most profitable areas.” Ibid. Ref.11. Similarly, requiring stewardship agencies to consider broader socio-economic and political considerations in their stewardship plans such as minimizing impact to pre-existing collection and management systems, working with NGOs and charitable organizations, or preferentially consider organizations that employ persons with disabilities as service providers makes it more difficult for new entrants as they may be unable to duplicate the relationships established by the incumbent stewardship agency. The incumbent will argue that the regulator has required it to introduce inefficiencies and any new entrant that does not have to meet the same obligations has been afforded a competitive advantage.

unavailable³⁶. Similarly a producer seeking to leave an existing stewardship plan and establish its own could face significant exit costs (such as early termination financial penalties levied by the stewardship agency).

Depending on the scope of the plan and its subsequent operation the overall effect may be that the first approved stewardship plan may lessen the economic freedom of subsequent producer stewardship efforts.

Stewardship plan approvals by the Director also raise the opportunity for agencies to claim that their market behaviours are sanctioned under the plan as approved by government and, in the case of anti-competitive acts, thus immune from the *Competition Act*^{37,38}.

Ministry approval of stewardship plans can serve to favour incumbents, pose barriers to new entrants and potentially provides agents with immunity from Canadian competition law by sanctioning anticompetitive behaviour³⁹, none of which is necessary or consistent with the objective of utilizing EPR as a means to increasing resource efficiency and maximizing economic efficiency.

Whose agents are stewardship agencies?

Where the majority or all producers have appointed the stewardship agency and the agency is responsible for submitting a stewardship plan for approval to the Director, the stewardship agency is effectively responsible for delivering the public policy objectives set forth by the BC MOE.

³⁶ “Denying entrants access to “essential facilities” or strategically increasing users’ switching costs are strategic entry barriers that have featured in competition cases in the PRO market. Although the definition of “essential facilities” differs somewhat between jurisdictions, the basic idea is that there is something to which access is necessary to compete in a market, it cannot be feasibly duplicated, it can be feasibly shared, and it is controlled by a monopolist or a dominant firm.” Ibid. Ref. 11.

³⁷ “In Canada such immunity from the Competition Act could be achieved under the common law doctrine of Regulated Conduct Defense (RCD). “Summarized briefly, the courts have held that the RCD will apply to immunize “regulated” conduct from scrutiny under the Act when four main criteria are satisfied: (1) there is validly enacted legislation regulating the conduct at issue; (2) the conduct is directed or authorized by that legislation (although it is still unsettled as to the degree of authorization that must exist); (3) the authority to regulate has been exercised; and (4) the regulatory scheme has not been hindered or frustrated by the conduct.” Mark Katz, Charles Tingley, *The “Regulated Conduct Defence” in Canada*, Competition Law, Federated Press, Volume XI, No. 2 (2006).

³⁸ As an example, in many OECD countries “An agreement to pass onto consumers the fee charged by a PRO is typically viewed as illegal price-fixing. This is the case even if making a fee “visible” is perceived as necessary to induce consumers to change their behaviour. An agreement to pass on the PRO fee reduces the scope for competition: Absent the agreement, competitors would decide individually what fraction of the PRO fee to pass on to customers.” Ibid. Ref. 11. As discussed in Ref.26 in some cases BC stewardship agencies provide a coordinating function for passing costs onto consumers by receiving eco-fees collected from consumers by retailers.

³⁹ In a March 23 2017 petition to the Supreme Court of British Columbia for judicial review, Crumb Rubber Manufacturer’s Inc. claims that the Director’s approval of the Tire Stewardship British Columbia (TSBC) used tire stewardship plan effectively, “...gives TSBC unfettered control over who becomes a Processor [tire recycler] in the Province.”, which it claims, “...has resulted in a government sanctioned or approved industry monopoly over the processing of used tires....” While these claims remain to be tested, they are notable for the implication that the Director’s approval of a stewardship plan confers immunity to the *Competition Act* Canada for anticompetitive actions taken by the stewardship agency pursuant to the plan – i.e. a Regulated Conduct Defense. See Ref. 37

With the Director's approval, the Government of British Columbia becomes invested in the approved stewardship plan with the result that the stewardship agency becomes less a producers' agent and more an agent of the MOE.

Principal-agent problems arise when a principal (e.g. MOE) delegates a task to an agent (stewardship agency) but has imperfect information about the agent and the agent has different objectives than the principal⁴⁰. As discussed in the previous section, while a stewardship agency's ostensible objective is to discharge the requirements of an approved stewardship plan, it may have objectives that are unseen and entirely dissociated from the objectives set out in the Recycling Regulation and its approved stewardship plan.

While the Ministry's intention for an agent is to collect and recycle materials on behalf of producers, the agent's objectives could be quite different - it could be to block new agent entrants or producer self-compliance (i.e. protecting its dominant position in the market), to shield subscribing producers from financial⁴¹ and legal responsibility and/or to convince the Ministry to attenuate its aspirations for collection and recycling performance. While the Ministry may suspect that the agent has some agenda other than achieving the regulated performance obligations, it has no way to confirm it.

As currently structured, there is a distinct information asymmetry between the MOE and its stewardship agencies – it is difficult for the Ministry to acquire enough information to determine whether an agent's broader actions are in the public interest. The Ministry has limited understanding of producer markets⁴² or service provider markets and is, for the most part, unable to ascertain how different actions by a given stewardship agency will affect those markets. Similarly, the Ministry has imperfect information regarding the efficiency of its stewardship agents.

Under the Recycling Regulation, the MOE can request producers and their agents to provide information about “assessing the performance of the producer's product stewardship program, the

⁴⁰ Principal-agent issues are the subject of “incentive theory”: The starting point of incentive theory corresponds therefore to the problem of delegation of a task to an agent with private information. This private information can be of two types: either the agent can take an action unobserved by the principal, the case of moral hazard or hidden action; or the agent has some private information about its cost or valuation that is ignored by the principal, the case of adverse selection or hidden knowledge. The theory studies when this private information is a problem for the principal, and what is the optimal way for the principal to cope with it." *The Theory Of Incentives I: The Principal-Agent Model*. Jean-Jacques Laffont & David Martimort (2001).

For an immediately accessible discussion of principal-agent issues see: *Secrets and Agents*. The Economist July 23 2016. <http://www.economist.com/news/economics-brief/21702428-george-akerlofs-1970-paper-market-lemons-foundation-stone-information>

⁴¹ See Ref. 26..

⁴² This limited understanding of producer markets extends to the supply of designated products and packaging into BC. The absence of this information makes establishing and enforcing collection and recycling targets difficult. As an example, the Canadian Electrical Stewardship Association's 2016 proposed stewardship plan for electrical small appliances and power tools, sewing machines, exercise, sports and leisure equipment, and art, crafts and hobby devices does not supply any information on the units or weight of designated products supplied by subscribing producers into British Columbia. Accordingly, the plan does not propose a collection rate target (expressed as the quantity collected as a percentage of quantity sold) but rather a target for increasing annual collection tonnage over a baseline established in 2016.

management of costs incurred by the program and the management of environmental impacts of the program” (section 5(1)(c)(v)). The regulation also requires producers “charging a fee associated with the product stewardship program that is identified separately on the consumer receipt of sale to disclose, “audited financial statements detailing revenues and expenditures associated with its efforts” (section 14 (4)).

While stewardship agencies may disclose this information, the MOE has no way to evaluate whether program costs are reasonable and the fees charged to consumers reflect rates that are the product of efficient operations⁴³. Further to this, the MOE does not request information about the collection and recycling market-engagement strategies (e.g. competitive tenders⁴⁴ and/or competition based on use of open-market financial incentives⁴⁵) employed by stewardship agencies and therefore cannot determine whether the stewardship agencies are using commercial best practices to drive effectiveness and efficiency. By extension it also cannot determine whether the stewardship agency is abusing its dominant position in the market and thereby adversely affecting service provider markets by blocking new entrants or favouring incumbent service providers.

Typically, where an entity has agency as sanctioned by government, has a monopoly position, levies charges for services from consumers (through eco-fees) and has the potential to broadly impact other markets, it is treated as a public utility. As such governments attempt to overcome

⁴³ A review of Encorp Pacific’s beverage container recycling program found that:

- “The combined costs for transportation and processing in B.C. are, on a per-container basis, more than twice as high as the equivalent line item in neighboring Alberta: 2.3 cents versus 1 cent. Transportation and processing costs in Encorp’s program exceeded \$22 million in 2013, making this the agency’s second largest expense after the handling fees paid to collection depots and retailers.
- Encorp charges Canada’s highest CRF—35 cents—for glass bottles larger than one liter. This is three times the highest fee in any other province. Furthermore, Encorp charges more for non-alcohol beverage containers than alcohol containers under a cost-allocation practice that is highly unusual among stewardship agencies.
- The presentation of financial data in Encorp’s annual report makes it impossible to know exactly how much its beverage container program costs. The report does not provide sufficiently transparent financial information to the Ministry of Environment, the agency authorized to carry out B.C.’s recycling regulation, nor to the public. Moreover, Encorp’s CRFs are determined by Encorp with no approval required by the Ministry, leaving consumers no recourse to affect change if desired.”

Review of British Columbia’s Container Recycling System Shows Strongly Performing System But Finds Growing Issues Around Fees and Transparency. CRI Releases New Report “*The Environmental and Economic Performance of Beverage Container Reuse and Recycling in British Columbia, Canada*” Los Angeles, Calif., Aug. 25, 2015.

⁴⁴ “Procurement by fair and competitive tenders can result in provision by the most efficient provider at a cost that reflects no excess profits. There is evidence that the use of competitive tenders significantly reduces collection costs. However, discriminatory tenders, tenders with inappropriate duration, or tenders that do not attract enough qualified bidders do not have these efficient results. Even weak bidders can strengthen competition in tenders. Changes in the tender rules and procedures can attract more potential bidders. Consequently, the tender rules and procedures used by PROs can have an important impact on the cost of services they procure.” OECD *Extended Producer Responsibility - Updated Guidance* April 12, 2016

⁴⁵ As an alternative to tendering for collection and processing services the BC Used Oil Management Association (BC.UOMA) uses a system of “...Return Incentives (RI) paid to private sector collectors and an Infrastructure Development Incentives (IDI) paid to used oil and antifreeze container processors to recover these materials from the environment”. These incentives are open to any private sector business that meets the standardized operating requirements and materials management criteria set forth by B.C.UOMA. *British Columbia Used Oil Management Association. Lubricating Oil And Antifreeze Material Product Management Program. Manual For Collectors And Processors.* December 5, 2012 Retrieved from: <http://usedoilrecycling.com/resources/file/B.C./Dec05-12ManualCollectosProcessorsSunnyRev.pdf>

the inherent information asymmetry between themselves and their utilities through regulated rate setting processes and oversight of how the utility engages other market actors. As an example, many of the proceedings before the British Columbia Utilities Commission relate to the revenue requirement necessary for electricity and natural gas utilities to operate and attendant consumer rates for electric power and natural gas distribution⁴⁶.

Some BC stewardship agencies have similar features but without any of the regulatory checks and balances that are typically implemented by regulators to overcome the principal-agent issues that arise from such arrangements.

In summary, the Recycling Regulation approach to regulating EPR deviates markedly from the Lifset-Lindhqvist description of pure-form EPR. Each of the factors discussed above – liability transfer from producer to agent, stewardship plan approval as potentially conferring both immunity from Canadian competition law and protection from new entrants and the principal-agent problems inherent to the stewardship agency model – pose compounding risks to competition and economic efficiency.

3.3. Regulatory oversight of EPR

The MOE's Compliance and Enforcement Policy and Procedure⁴⁷ states that “regulatory requirements administered by the ministry are dealt with in the context of a social regulatory approach as opposed to the command and control approach reflected in the *Criminal Code*. This distinction is important for the development of ministry compliance and enforcement policies as a social regulatory approach allows the program areas and the areas responsible for investigations to be consultative in determining the most appropriate response to non-compliance.”

The Ministry's compliance model provides a variety of options for achieving compliance and emphasizes the need for staff to use the best available information⁴⁸ to assess each case on its own merits and choose the most appropriate response for the situation. The model involves:

1. Setting regulatory requirements that are clear, practical and enforceable⁴⁹;

⁴⁶ “The British Columbia Utilities Commission is, “...is responsible for ensuring that customers receive safe, reliable and non-discriminatory energy services at fair rates from the utilities it regulates, that shareholders of these utilities are afforded a reasonable opportunity to earn a fair return on their invested capital, and that the competitive interests of B.C. businesses are not frustrated.” <http://www.bcuc.com/CorpProfile.aspx>

⁴⁷ Version 3 Updated May 2014

⁴⁸ Section 8 of the Recycling Regulation requires obligated producers to submit an annual report that includes information on its operations in the preceding calendar year such as: a description of educational materials and educational strategies the producer uses for the purposes of this Part; the location of its collection facilities, and any changes in the number and location of collection facilities from the previous report; efforts taken by or on behalf of the producer to reduce environmental impacts throughout the product life cycle and to increase reusability or recyclability at the end of the life cycle; a description of how the recovered product was managed in accordance with the pollution prevention hierarchy; the total amount of the producer's product sold and collected and, if applicable, the producer's recovery rate; a comparison of the approved plan's performance for the year with the performance requirements and targets in the regulation and the approved plan.

⁴⁹ Examples of Requirement-Setting Activities: establish acts or regulations, or conduct regulatory reviews; consult with industry associations or other advisory groups on requirements; prepare authorizations (e.g., permits, licenses).

2. Promoting requirements in ways that encourage individuals and businesses to voluntarily comply⁵⁰;
3. Verifying (through monitoring, inspections and audits) that individuals and businesses are meeting their regulatory requirements⁵¹; and
4. Where these requirements are not being met, adjusting the program management approach or, where appropriate, compelling compliance through enforcement⁵².

The Environmental Protection Division (EPD) is responsible for the *Environmental Management Act* and its regulations, including the Recycling Regulation. The EPD has a mandate to protect human health and environmental quality by: regulating discharges to the air, land and water; promoting environmental stewardship with partners; responding to high-risk environmental emergencies; reducing and removing toxins and waste that contaminate the land, air and water; regulating the application of pesticides; and monitoring and reporting on environmental quality.

The MOE's Compliance and Enforcement Policy and Procedure sets out a range of compliance tools and the circumstances in which each tool may be used, including:

- A written advisory that may include a recommended course of action expected to achieve compliance;
- A written warning of the possibility of an escalating response should non-compliance continue;
- An order to address non-compliance in the form of a written, legal instrument issued by designated ministry officials;
- Remedial or punitive administrative sanctions;
- An administrative penalty in the form of a discretionary financial penalty imposed by designated ministry Statutory Decision Makers⁵³; and
- A restorative justice process, a ticket for the most minor offences and/or court prosecution.

The MOE follows a non-compliance decision matrix that takes into consideration escalating levels of environmental, human health or safety impacts (actual or potential) and a diminishing

⁵⁰ Examples of Compliance Promotion Activities: develop guidelines or best management practices (e.g., streamside crossing guidelines); prepare public information and education materials (e.g., Hunting Synopsis); outreach (e.g., public meetings, field contacts, workshops); launch a media campaign (newsprint and television); develop a social marketing strategy to target changes of a specific behavior; provide compliance assistance and technical advice.

⁵¹ Responding to Non-compliance: If compliance verification reveals noncompliance with a regulatory requirement, staff assess the situation and determine an appropriate response, taking into consideration the facts specific to the situation as well as the need for general deterrence. Potential responses may include: continued monitoring of the non-compliant party (verification); conducting activities to encourage compliance (promotion); amending the existing requirement (setting requirements); and compelling compliance (enforcement).

⁵² Examples of Enforcement Activities: program staff issue a warning to a noncompliant party; statutory decision maker issues an administrative sanction, restricting or canceling a party's authorization to conduct commercial activities; Conservation Officer, with the technical assistance of a biologist, conducts investigation to recommend charges for impact to a riparian area.

⁵³ MOE introduced administrative penalties under the *Environmental Management Act* and Pest Management Act in June 2014.

likelihood of achieving compliance. The MOE publishes a Quarterly Environmental Enforcement Summary.

Only one stewardship plan approval has been rescinded by the MOE for non-performance⁵⁴ despite a number of stewardship agencies operating in non-conformance with the requirements set forth in their approved stewardship plans⁵⁵.

4. Improving environmental effectiveness and economic efficiency for EPR in British Columbia

Wholesale regulatory reform is not required to move EPR in BC towards a more economically efficient application of EPR. Section 4.1 provides recommendations for actions (based on the analysis in section 3) that can be taken under the existing regulatory framework to address a key deliverable of this report: to identify the legal and institutional best practices for introducing competition at various levels of the same product category with a view to greater economic efficiency.

4.1. General recommendations to make EPR more efficient under the BC Recycling Regulation

The recommendations below are directed at avoiding government/policy-induced market failures and can be implemented without legislative or regulatory reform:

1. **Become a better-informed regulator.** As noted earlier, market failure can arise in setting environmental targets (e.g. collection or recycling targets) that are not sufficiently stringent to deal with the externalities at hand. Setting and enforcing targets requires the MOE to collect data regarding the quantity of designated materials supplied into British Columbia⁵⁶.

Use the data to set environmental targets based on an assessment of the environmental and financial impacts associated with designated wastes as graduated steps on a specified

⁵⁴ A program plan proposing to manage waste electronics was given plan approval but failed to operate. Plan approval was rescinded within the first year. See Environmental Appeal Board: DECISION NO. 2009-EMA-003(a) <http://www.eab.gov.bc.ca/ema/2009ema003a.pdf>

⁵⁵ The battery stewardship program operated by Call2Recycle reported that it operated without an approved collection target for 2015 “as agreed with the Ministry file lead”. The program reported an overall collection rate of 19% (the recovery rate cited in the Recycling Regulation is 75%). Source: *Call2Recycle British Columbia 2015 Annual Report*.

⁵⁶ Under Section 8, Part 2 of the BC Recycling Regulation an annual report must provide the Director with (2)(e) the total amount of the producer's product sold and collected and, if applicable, the producer's recovery rate. The reporting requirements could be expanded and made electronic with the MOE maintaining a registry of producer unit sales and product composition that would then be compared on a weight basis to the aggregate reported quantity of material collected and managed in accordance with the pollution prevention hierarchy by subscribing producers' respective stewardship agencies.

timeline. Once targets have been established, measure performance towards those targets and enforce those targets with penalties set to reflect the environmental and financial impacts of the externalities where targets are not met.

- **Market Failure Addressed:** Reducing the financial and environmental externalities associated with end-of-life products and materials subject to regulation under the BC Recycling Regulation
- **Mechanism:** Electronic data collection, verification and analysis against producer/stewardship agency reports
- **Costs and benefits:** The establishment of an electronic registry would pose an upfront cost to the Ministry but would reduce administrative costs associated with measuring EPR performance while enhancing the integrity of EPR regulation in British Columbia.

2. **Ensure sufficient resources in order to deliver timely oversight and enforcement of:**

- **Performance objectives**, including use of penalties as a mechanism of ensuring parity between low and high performing producers and PROs in the same product category. Ensuring even enforcement across producers and PROs promotes fair competition.
- **Free-riding producers.** Bring free-riders into compliance to mitigate the effects of free-rider non-compliance on compliant producers and to support delivery of the government’s environmental objectives. Monitor compliance and enforcement actions and assess their effect.
- **Market Failure Addressed:** Reducing distortions to market competition by ensuring all producers/stewardship agencies meet the same performance standards and objectives
- **Mechanism:** Increased oversight and enforcement
- **Costs and benefits:** Increased oversight and enforcement demands increased Ministry human resources. However, the benefits include improving EPR performance, preventing market distortions in both producer and service provider markets associated with free riding while enhancing the integrity of EPR regulation in British Columbia.

3. **Encourage competition between producers and between stewardship agencies.** This is achieved by not applying the provisions that require any subsequent stewardship plan for a given product to consider “the product stewardship programs of other producers for products in the same product category” (section 5(2)(l)) and “the structure of financial and operational co-operation with other producers” (section 5(2)(m)). As discussed earlier, these requirements pose barriers to the entry of new producer and agency compliance efforts.

The Director’s approval of a stewardship plan should be based on assessing the applicant’s ability to achieve the performance targets and to remain viable while doing so rather than the impact it will have on competing plans.

- Market Failure Addressed: Fostering competition and increasing opportunities for economic efficiency
 - Mechanism: Discretionary stewardship plan evaluation by the Director
 - Costs and benefits: There is no cost associated with this measure but significant potential benefits associated with increased opportunities for competition and collaboration amongst producers and stewardship agencies.
4. **Ensure producers understand that in subscribing to a stewardship agency they are responsible for achieving stewardship plan outcomes.** Specifically, the Ministry should provide clear guidance that producers are effectively jointly liable for the agent's performance with respect to the performance requirements set forth in the approved stewardship plan. Failure of the agent to achieve the planned outcomes could result in the plan being rescinded and all subscribing producers thus being out-of-compliance with the BC Recycling Regulation.
- Market Failure Addressed: Improved environmental performance
 - Mechanism: Guidance and clarification to producers and their agents
 - Costs and benefits: There is no cost associated with this measure but significant benefits associated with ensuring that producers have an incentive to apply pressure on their agents to ensure conformance to their respective approved stewardship plans.
5. **Carefully consider whether to require producers to establish a uniform province-wide collection system.** As discussed in the section *Distinguishing true market failure*, there are situations where the MOE might require a uniform province-wide collection system (e.g. residential curbside collection of packaging and printed paper as discussed further on). This requirement results in a monopoly collection system that no one producer can establish and may be unnecessary for many materials. Geographic collection targets can achieve similar broad coverage without mandating how producers achieve those targets.
- Market Failure Addressed: Avoid lessening competition
 - Mechanism: Policy analysis and discretionary stewardship plan evaluation by the Director
 - Costs and benefits: There is no cost to this measure. The attendant benefits may be more collection systems for the same products and materials thus offering consumers greater choice and opportunity to return products and materials for collection and management.
6. **Refocus stewardship plans to describe how competitive markets will be harnessed to achieve EPR outcomes.** Require stewardship agencies to describe their proposed market-engagement strategy for the collection, transport, processing and marketing of designated materials. The Ministry then needs to vet the market engagement strategy to ensure that it is:

- Transparent, non-discriminatory and promotes reasonable guidance to competitive service provider markets;
- Likely to induce market actors to undertake activities (e.g. collection, transport, processing etc.) that will contribute to meeting the environmental targets prescribed by the Regulation and the Director’s approval; and, further to this,

7. **When evaluating stewardship plans consider relevant criteria from The OECD’s Competition Checklist as contained in its *Competition Assessment Toolkit: Volume 2 – Competition Assessment Guidance 2010*⁵⁷.** This includes assessing whether a stewardship plan does any of the following, all of which are detrimental to efficient provision of EPR:

A. Limits the number or range of suppliers (i.e. service providers)

This is likely to be the case if the proposal:

1. Grants exclusive rights for a supplier to provide goods or services
2. Establishes a license, permit or authorisation process as a requirement of operation⁵⁸
3. Limits the ability of some types of suppliers to provide a good or service
4. Significantly raises cost of entry or exit by a supplier
5. Creates a geographical barrier to the ability of companies to supply goods services or labor, or invest capital

B. Limits the availability of suppliers (service providers) to compete

This is likely to be the case if the proposal:

1. Limits sellers’ ability to set the prices for goods or services
2. Limits freedom of suppliers to advertise or market their goods or services

⁵⁷ “Increased competition can improve a country’s economic performance, open business opportunities to its citizens and reduce the cost of goods and services throughout the economy. But numerous laws and regulations restrict competition in the marketplace. Many go further than necessary to achieve their policy objectives. Governments can reduce unnecessary restrictions by applying the OECD’s “Competition Assessment Toolkit”. The Toolkit provides a general methodology for identifying unnecessary restraints and developing alternative, less restrictive policies that still achieve government objectives. One of the main elements of the Toolkit is a Competition Checklist that asks a series of simple questions to screen for laws and regulations that have the potential to unnecessarily restrain competition. This screen focuses limited government resources on the areas where competition assessment is most needed.

These materials can be used by governments in three main ways:

- In the evaluation of draft new laws and regulations (for example, through regulatory impact assessment programs)
- In an evaluation of existing laws and regulation (in the economy as a whole or in specific sectors)
- By government bodies engaged in development and review of policies, such as ministries that develop laws or the competition authority in its evaluation of competitive impacts of regulations”

OECD Competition Checklist as contained in its *Competition Assessment Toolkit: Volume 1 – Competition Assessment Guidance 2010*

⁵⁸ However, as discussed in the section on market failure resulting from poor market information, recycling standards can improve recycling market functioning by providing producers with information and some level of assurance about the services they are buying.

3. Sets standards for product quality that provide an advantage to some suppliers over others or that are above the level that some well-informed customers would choose
 4. Significantly raises costs of production for some suppliers relative to others (especially by treating incumbents differently from new entrants)
- C. Reduces the incentive of suppliers (as stewardship agencies complying on behalf of producers and service providers providing services to stewardship agencies) to compete

This is likely to be the case if the proposal:

1. Creates a self-regulatory or co-regulatory⁵⁹ regime
 2. Requires or encourages information on supplier outputs, prices, sales or costs to be published
 3. Exempts the activity of a particular industry or group of suppliers from the operation of general competition law
- D. Limits the choices and information available to customers (i.e. producers subscribing to the stewardship agency)

This is likely to be the case if the proposal:

1. Limits the ability of consumers to decide from whom they purchase
 2. Reduces mobility of customers between suppliers of goods or services by increasing the explicit or implicit costs of changing suppliers
 3. Fundamentally changes information required by buyers to shop effectively
- Market Failure Addressed: Avoid lessening competition
 - Mechanism: Ministry guidance, producer and stewardship agency business planning, Ministry policy analysis and stewardship plan evaluation by the Director
 - Costs and benefits: There may be additional time required for the Ministry to understand the markets that a given stewardship plan will impinge on. The Director will need to ensure that agencies have a clear understanding of what market information they must provide in their plan. The attendant benefits will be the increased opportunities for economic efficiency and attendant reduction in costs to consumers.

⁵⁹ Another example can be provided from the areas of self-regulation (or co-regulation) where some governments have increasingly relied on market participants to collaborate and develop compatibility, quality and safety standards...One aspect that has raised some concerns is that the self-regulatory mechanisms, which allow firms to collaborate in certain areas, may also lead to firms coordinating their activities and engaging in cartel-like behaviour (e.g., price-fixing) and creating barriers to entry for new firms.” OECD Competition Checklist as contained in its *Competition Assessment Toolkit: Volume 2 – Competition Assessment Guidance 2010*.

8. **Collaborate with the Competition Bureau** to educate BC market participants about their responsibilities as competitors and how to seek assistance if they believe they are the target of anti-competitive activities.

5. The regulation and development of EPR for packaging and printed paper in British Columbia

In section 2.1 *What is a market?* we established the concept that markets are institutions of exchange which are governed and shaped by legal rules and the system (i.e. government) for making and enforcing those rules.

This section describes the legal rules governing EPR for PPP in BC as comprised of the Recycling Regulation, its Schedule 5 and the Director's discretion (as afforded by the Recycling Regulation) in approving PPP stewardship plans submitted by stewardship plan proponents.

It then describes the market that has emerged from these rules which in turn sets the stage to address the other primary deliverable of this report in section 6: to assess the risks and benefits associated with competition at various levels within the PPP category and identify best practices for introducing competition at various levels within that category.

Readers should note that sections 5.1 through 5.4 provide details about the PPP marketplace that pre-dated Schedule 5 and the interaction between the stewardship plan proponent Multi-Material BC (MMBC), stakeholders and the MOE as those interactions contributed to the essential design of MMBC's PPP Stewardship Program.

Sub-section 5.5 describes the process by which a stewardship plan for beer-related PPP and a stewardship plan for servicing 120,000 multi-family households were respectively approved and denied by the MOE.

Consideration of the latter plan to service multi-family households in the context of the MMBC plan was one of several issues that precipitated the Ministry's need to address, "how competitive stewardship plans within a single extended producer responsibility product category should be administered".

Section 5.6 provides a summary of regulatory oversight of EPR for PPP and the implications of producer free-ridership.

In concert, these sections are designed to provide the reader with context for section 5.7 *Competitive implications of the MMBC Stewardship Plan*.

5.1. Pre-regulatory market analysis

For many years prior to the Recycling Regulation, local governments had been implementing and gradually expanding collection of PPP from residents⁶⁰. Most municipalities delivered PPP services using private contractors selected through competitive procurement processes while some municipalities provided collection services using local government staff. A few municipalities processed the collected PPP in municipally-owned and operated processing facilities. Most municipalities selected a processing contractor through a competitive procurement process or by establishing a partnership with a local not-for-profit organization. As local governments developed an understanding of the challenges associated with management of PPP, they began to call on government to develop strategies to reduce packaging and to shift responsibility for PPP to producers⁶¹.

As such, the economic backdrop for the regulation of EPR for PPP was wide-spread local government collection of residential PPP and processing of the collected PPP, delivered primarily through sub-contractors.

5.2. Designation of PPP as Schedule 5 of the Recycling Regulation

During the MOE's consideration of designating EPR for PPP, the MOE noted:

- Packaging and printed paper comprised approximately 20-30% (by weight) of the material deposited in landfills;
- Public discontent over excessive packaging;
- Municipal governments had made several requests to the Ministry to regulate packaging, including several Union of BC Municipalities (UBCM) resolutions⁶²;
- Industry was supportive of the Recycling Regulation, which set environmental targets while leaving program operations to producers and their agents;
- Local governments were supportive of the Ministry's intentions of adding packaging and printed paper to the Recycling Regulation; and
- The Ministry of Small Business, Technology and Economic Development and the Ministry of Community and Rural Development⁶³ were supportive of an amendment to the Recycling Regulation to add packaging and printed paper.

The Recycling Regulation was amended on May 19, 2011 to include Schedule 5 for the packaging⁶⁴ and printed paper⁶⁵ product category. With this amendment, producers of PPP were

⁶⁰ The *Environmental Management Act* requires that each regional district submit a solid waste management plan for approval by the Minister of Environment. As part of this process, many local governments have developed strategies to reduce the amount of waste requiring disposal including collection systems for household PPP.

⁶¹ The Union of BC Municipalities (UBCM) acknowledged in their policy paper titled Packaging and Printed Paper Product Stewardship (September 23, 2012) that the addition of packaging, and to a lesser extent printed paper, to the Recycling Regulation was partly in response to local government requests.

⁶² UBCM recommended that producers offer local governments a right of first refusal to provide services and maintain or exceed existing levels of collection service.

⁶³ As the Ministries were known at that time.

obligated to submit a stewardship program plan by November 19, 2012 for approval by the Director⁶⁶ under Part 2 of the Recycling Regulation and to have, and comply with, an approved plan by May 19, 2014 in order to sell, offer for sale, distribute or use in a commercial enterprise (i.e. supply) the product in BC.

As discussed earlier, whether a plan is submitted by an individual producer or by an agency on behalf of one or more producers, the Director may approve a stewardship plan under Part 2 if the Director is satisfied that conditions are met under Part 5. As discussed in section 3 and later in this section, the Director's discretion in emphasizing certain provisions of section 5 of the Recycling Regulation⁶⁷ has a critical impact on the design of the stewardship plan and its resulting effect on the markets as the plan has been implemented.

5.3. Development of the MMBC PPP Stewardship Plan

In anticipation of the amendment of the Recycling Regulation to add Schedule 5 for PPP, industry trade associations⁶⁸, acting on behalf of their producer members, formed the not-for-profit Multi-Material British Columbia (MMBC) to discharge producers' obligations under section 2.

Following the promulgation of Schedule 5 on May 19, 2011, MMBC began to assess the current PPP collection and processing system and identify potential options for engaging PPP collection and processing markets to meet MMBC's obligations under its prospective stewardship plan⁶⁹.

⁶⁴ "Packaging" is defined in the *Environmental Management Act* as "a material, substance or object that is used to protect, contain or transport a commodity or product, or attached to a commodity or product or its container for the purpose of marketing or communicating information about the commodity or product". Beverage containers, with the exception of milk containers, are managed under a provincial deposit return program.

⁶⁵ "Printed Paper" is defined in Schedule 5 of the Recycling Regulation as "paper that is not packaging, but is printed with text or graphics as a medium for communicating information, and includes telephone directories, but does not include other types of bound reference books, bound literary books, or bound text books".

⁶⁶ Under the *Environmental Management Act*, "director" means a person employed by the government and designated in writing by the minister as a director of waste management or as an acting, deputy or assistant director of waste management.

⁶⁷ See Appendix A.

⁶⁸ The associations that acted to incorporate MMBC and formed its founding board were the Retail Council of Canada (RCC), Food and Consumer Products of Canada (FCPC), Canadian Federation of Independent Grocers (CFIG), Canadian Restaurant and Food Services Association (CRFA) and Canadian Newspaper Association (CNA).

⁶⁹ A survey of local governments, not-for-profit organizations and private companies collecting and managing residential PPP was summarized in the report titled *Current System for Managing Residential PPP in BC* (March 2012). The assessment identified that 78% of single-family households and 79% of multi-family households were receiving PPP collection service from local governments. A further 18% of BC residents had access to depots accepting PPP operated by local governments and not-for-profit organizations (rather than collection from their residences). The survey identified 24 organizations that each operated one processing facility and another four organizations that, together, operated 19 material recovery facilities (MRFs), for a total of 43 facilities. Four of these 28 organizations processed approximately 60% of the residential PPP collected in BC. Based on estimates of the quantity of PPP supplied to residential consumers in BC, the activities identified in the MMBC survey were responsible for collecting between 53% and 60% of available residential PPP.

MMBC's *PPP Stewardship Program Design Options* report identified a series of 16 options, applied evaluation criteria and described issues to be taken into consideration when selecting a preferred option.

MMBC proceeded to develop a PPP Stewardship Program Plan based on a preferred design option that involved:

- Establishing a province-wide standard list of PPP to be collected from residents;
- Offering a right of first refusal with financial incentives to local governments providing curbside collection;
- Offering financial incentives to all collectors providing multi-family and depot collection;
- Offering additional payments to local governments for communications to residents and administration of collection contracts;
- Utilizing pro-forma terms and conditions for all collectors accepting the collection incentive offer, including a stipulation that collectors under contract to MMBC deliver collection services to residents without double charging residents for the service;
- Contracting for post-collection services through a request for expressions of interest followed by a request for proposals (RFP); and
- Establishing a dispute resolution process to resolve disputes between MMBC and service providers through escalating mechanisms of discussion, facilitation, mediation and arbitration.

MMBC released a draft plan for consultation on October 23, 2012 and submitted a PPP Stewardship Plan to the Director, as required, on November 19, 2012 while committing to continue consultation with stakeholders through to year-end. An updated PPP Stewardship Plan was submitted on February 5, 2013.

Following submission of the revised PPP Stewardship Plan, the MOE provided additional comments. After a series of meetings and correspondence outlining the MOE's requirements, MMBC made additional edits and submitted a revised Plan on April 8, 2013.

The Director approved the MMBC PPP Stewardship Plan on April 15, 2013.

5.4. Implementation of the MMBC PPP Stewardship Plan

MMBC launched its PPP Stewardship Plan on May 19, 2014. At its launch, the PPP collection system was comprised of:

- Collectors servicing 859,000 single-family households accepted the curbside collection incentive or were awarded a curbside collection contract⁷⁰. The portion of the 936,118 single-family households listed in Appendix B that were not part of MMBC's program continued to receive curbside collection of PPP by local governments that opted out of MMBC's program.

⁷⁰ Including some households that were receiving only curbside garbage collection on November 19, 2012.

- Of the 405,666 multi-family building households listed in Appendix B of the MMBC PPP Stewardship Plan, collectors servicing 381,000 multi-family households accepted the multi-family collection incentive. The remaining 24,666 multi-family households continued to receive collection of PPP from service providers that did not accept MMBC's multi-family collection incentive.
- Many local governments, not-for-profit organizations and private companies accepted the depot collection incentive but some local governments chose to continue to operate their existing unstaffed drop-off bins outside of the MMBC program (rather than modify their depot system to be staffed and secure, as required by MMBC's depot collection operating standard and contract).

Responses to MMBC's RFP for post-collection services determined the form of MMBC's post-collection system. MMBC's RFP requested submissions to provide services in one or more of ten zones that, together, represented the entire province. Respondents could offer to provide services in one zone, a combination of zones of their choosing or all ten zones.

Green by Nature (a consortium of Emterra Group, Casades Recovery Inc. and Merlin Plastics) was awarded a contract to provide services in all ten zones by subcontracting with forty existing facilities across BC to act as receiving facilities to which MMBC's curb side and multi-family building collectors would deliver their PPP, as consolidation facilities for PPP picked up from MMBC depots, as processors to sort single-stream PPP into containers and fibres, as transfer facilities and, in some cases, as processors of paper fibres. MMBC's post-collection contractor invested \$32 million in a new sorting facility to which containers from across the province were transferred for mechanical sorting.

The establishment of this comprehensive PPP collection and post-collection system by MMBC has implications for new stewardship agency entrants seeking access to this system as we discuss in section 5.7 *Competitive implications of the MMBC Stewardship Plan*.

5.5. Other PPP stewardship plans

Brewers Recycled Container Collection Council

Brewers Distributor Limited (BDL) developed and consulted on a Schedule 5 Stewardship Plan as filed by the Brewers Recycled Container Collection Council (BRCCC)⁷¹ on November 19, 2012. The BRCCC plan Schedule 5 plan proposed to piggyback collection and management of its non-deposit packaging with the Brewer's Schedule 1 program for its deposit beverage containers.

During the period between November 19, 2012 and May 19, 2014, the date on which producers' obligation to recover PPP commenced, the BRCCC Schedule 5 Plan was revised six times (February, May, September and December 2013 and February and April 2014). The Director had

⁷¹ The not-for-profit Brewers Recycled Container Collection Council was registered as an agency to administer the collection of its used beverage containers under Schedule 1 and associated packaging under Schedule 5 of the *Recycling Regulation* with BDL providing logistic services to BRCCC.

not approved the plan as of May 19, 2014 and BRCCC's discussions with the MOE and key stakeholders continued through 2015 and early 2016, leading to further revisions in August 2014 and April 2016, with a final revised version of the Plan dated May 2016 (which was approved in July 2016).

The primary stakeholders affecting the Director's decision to approve the BRCCC stewardship plan were the Liquor Distribution Branch (LDB, a branch of the BC government) and MMBC.

To acknowledge the inclusion of the LDB retail collection network in the BRCCC stewardship plan, the MOE required an agreement between the LDB and BRCCC as a condition of Schedule 5 plan approval⁷². Under direction of the MOE, BRCCC also concluded an agreement with MMBC in December 2015 regarding the management of beer and cider PPP collected by depots under MMBC contract^{73,74}.

The Director approved the BRCCC Schedule 5 Stewardship Plan on July 31, 2016.

StewardChoice Enterprises Inc.

On May 28, 2014, approximately one week after MMBC launched its PPP Stewardship Plan, StewardChoice Enterprises Inc. (SC) announced that it intended to publish a PPP stewardship plan in June 2014.

SC posted its draft plan (version 1) on June 26, consulted with stakeholders over the following months and submitted its PPP Stewardship Service Plan (version 2) to the MOE in September 2014. The SC PPP Stewardship Service Plan proposed to provide producer-funded collection service to 120,000 multi-family households not being serviced through the MMBC program in Year 1 and to expand service to 350,000 households by Year 3.

During development of its Plan, SC had issued a press release on July 8, 2014 announcing SC's collaboration with Progressive Waste Solutions (PWS). Progressive Waste Solutions had not accepted MMBC's offer of a multi-family building collection incentive and the multi-family buildings it serviced in the lower mainland were therefore not part of MMBC's program.

Accordingly, the SC PPP Stewardship Service Plan proposed to provide producer-funded collection service to multi-family households not receiving producer-funded collection services through MMBC (as a first priority), curbside and depot-only households not receiving producer-

⁷² Representatives of the BCMOE acted as intermediaries between parties, both holding discussions with LDB and BRCCC individually as well as attending meetings between the parties.

⁷³ This agreement was negotiated as part of discussions BRCCC had with MMBC to address the Director's considerations in BRCCC plan approval under section 5(2)(l) and (m) Recycling Regulation respectively: (l) "the product stewardship programs of other producers for products in the same product category" and (m) "the structure of financial and operational co-operation with other producers",

⁷⁴ The depots with whom MMBC had contracted (as BRCCC awaited plan approval) had been collecting beer related packaging prior to Schedule 5 and either shipping it to BDL (along with Schedule 1 containers) or directly to recycling markets.

funded collection services through MMBC (as a subsequent priority) and local governments that propose to cancel their agreement with MMBC (as the last priority).

SC made revisions to its plan as a result of the MOE's review of its plan and ultimately published a revised plan (version 3) on June 1, 2015. SC consulted with stakeholders on this revised plan, made additional edits as a result of stakeholder comments and submitted a revised plan (version 4) to the MOE on July 27, 2015. Additional edits were made as a result of the MOE's review of the revised plan. Two subsequent versions were published, version 5 dated November 30, 2015 and version 5.1 dated December 7, 2015.

On January 13, 2016, the Director notified SC that the plan would not be approved because the plan failed to meet the requirements of the Recycling Regulation. In rejecting the SC plan the Ministry also noted (amongst other reasons) the following concerns regarding its impact on the MMBC program:

1. StewardChoice's "consultation did not provide sufficient information for many consulted parties to develop an understanding that implementation of the StewardChoice Enterprises Inc. Plan could involve a risk of service reductions to existing producer-funded services (i.e. the implications of StewardChoice Enterprises Inc. drawing producer funding away from Multi-Material BC appear not to have been well conveyed)."
2. The StewardChoice plan "relies on an existing network of recycling depots for collection of some products, but StewardChoice Enterprises Inc. has not demonstrated that it will be able to conclude fair agreements (e.g. with MMBC) to fulfill this aspect of its plan, nor does the plan commit to the use of actual costs as a basis for such agreements."
3. "In deciding whether to approve a submitted stewardship plan, I [Director] have concluded that there would be significant implications for existing packaging and printed paper collection services in British Columbia and for the Ministry of Environment's role in overseeing these services if the Plan, in its current form, were to be approved and implemented. Specifically, implementation of the Plan would require negotiated revisions to the existing Multi-Material BC Plan, and the creation of appropriate procedures for ministry oversight of two or more competing plans within a single product category."

The Director further noted that "It is clear to me upon review of the Plan that the MOE must undertake significant policy work to fully assess how competitive stewardship plans within a single extended producer responsibility product category should be administered, and that this work would most appropriately be undertaken prior to the approval of new competing plans."

SC submitted a Notice of Appeal of this decision on February 5, 2016. The Environmental Appeal Board proceeded to receive oral and written submissions from the MOE, SC and MMBC.

SC withdrew their appeal in July 2016, prior to a decision from the Environmental Appeal Board⁷⁵.

5.6. Regulatory oversight of EPR for PPP

The MOE's Compliance and Enforcement Plan for PPP⁷⁶ described the regulatory context as of May 2014: "There were no producers that had an approved Product Stewardship Plan and there was only one agency, Multi-Material BC (MMBC) that had an approved Stewardship Plan. A number of producers are in compliance as they have appointed MMBC to discharge their obligations under the BC Recycling Regulation. All other parties defined as producers under the Regulation are in non-compliance. Almost 1,000 producers have signed on with MMBC and it is estimated that there are about 300 other producers who are in non-compliance."

The MOE's enforcement strategy was to ensure:

- All non-compliant producers are formally notified that they are non-compliant with the Regulation;
- Some of the largest non-compliant producers are sent warning letters; and
- A few of the largest non-compliant producers who refuse to comply with the Regulation are issued administrative penalties.

The Compliance and Enforcement Plan for PPP noted that court prosecutions may be considered if administrative penalties are unsuccessful in achieving compliance.

In practice, the MOE relied on MMBC for initial outreach to notify PPP producers of their potential obligation. After identifying potentially obligated parties through sector-specific research, MMBC would contact companies to determine if they likely met the obligated-party criteria and solicit the companies to subscribe to MMBC. Names of non-responsive companies were provided to the MOE for follow up to determine non-compliance and if enforcement action was needed. From December 2013 to September 2017 the MOE had issued:

- Approximately 1,650 Advisory Letters;
- Approximately 100 Warning Letters
- Approximately 15 Administrative Penalty notifications (warnings that penalties are imminent if compliance is not achieved); and
- Three Administrative Penalties.

Assessing the effectiveness of the MOE's enforcement efforts is difficult. The Current System

⁷⁵ In communications to BC local governments, SC stated that it had concluded that "the MoE holds strong views about their perception of the peril associated with competition under the existing regulation" and "resolving this peril was beyond any accommodation StewardChoice could have made". SC indicated that "once government has ... made public competition policy for EPR in BC", SC will evaluate how to proceed.

⁷⁶ July 4, 2014

report⁷⁷ prepared by MMBC estimated that there was 350,000 to 400,000 tonnes of PPP supplied by producers into British Columbia in 2011⁷⁸. MMBC reported 243,191 tonnes of PPP supplied by its producer subscribers in 2015 which suggests de minimis and non-compliant producers supplied in the range of 107,000 to 157,000 tonnes⁷⁹. Accordingly, anywhere from 27% to 45% of the volume of PPP supplied into BC is associated with free-riders that are either de minimis or non-compliant producers.

The Auditor General of BC notes that: “The challenge posed by free-riders, or non-compliant producers, is significant. The Ministry estimates that the underfunded costs to MMBC of recycling newspapers [newspaper publishers are non-compliant with the BC Recycling Regulation] are approximately \$3 to \$5 million per year. As a result of this shortfall, MMBC has publicly stated that it is unable to expand its services to some communities not covered under the current plan, such as Abbotsford and Kamloops. In addition, the Ministry expressed concern that the persistence of a financially significant non-compliant producer group undermines stakeholder confidence in the system. Left unchecked, the Ministry views this situation as threatening the structure of product stewardship and increasing the difficulty of addressing other challenges.”⁸⁰

5.7. Competitive implications of the MMBC Stewardship Plan

The normative set of rules by which MMBC intervened in the existing markets for the collection and post-collection management of PPP and reshaped those markets to service the approved stewardship plan is comprised of the Recycling Regulation, its Schedule 5 and the approved MMBC PPP Stewardship Plan itself.

Where the BRCCC plan essentially codifies management of beer secondary packaging in an existing supply-chain, the MMBC plan layers contracts administered by MMBC over pre-existing commercial relationships between local governments and their contractors and, in some cases, replaces the role of municipalities by establishing new commercial relationships with private companies administered by MMBC directly. As such, MMBC has created a province-wide PPP supply chain comprised of a collection network and system for receiving, consolidating, transferring, processing and marketing collected PPP.

As recognized by MMBC at the time, it is a monopsonist (i.e. a sole buyer) of collection and processing services on behalf of its member stewards. Accordingly, MMBC undertook an analysis of alternative program designs on competition in service provider markets. Its choice of providing collectors with financial incentives and using a competitive request for proposals for post-collection services was with a view to preserving competition and deriving the maximum

⁷⁷ Ibid. Ref. 69

⁷⁸ This estimate may be understated due to population growth and overstated due to light weighting of packaging and the decline of print media that have occurred since 2011.

⁷⁹ It is estimated that non-compliant newspaper publishers currently supply approximately 34,000 tonnes of newspaper annually.

⁸⁰ Auditor General of British Columbia. November 2016. *Product Stewardship: An overview of recycling in B.C.*

cost savings and benefits from it⁸¹. The outcomes of this program design choice are described below.

Competition in PPP collection markets

In 2015, MMBC provided 871,000 single-family households and 384,000 multi-family households in 151 incorporated municipalities, electoral areas, and First Nations communities with curbside or multi-family collection services, including 38,000 households that received only curbside garbage collection service prior to the MMBC program. To deliver these services, MMBC contracted with:

- 75 local governments, First Nations, or private collectors to deliver curbside service;
- 47 local governments, First Nations, or private collectors to deliver multi-family building collection service; and
- 204 depots in 27 regional districts to receive residential PPP from the households receiving curbside and multi-family collection service as well as 460,000 households not receiving household collection service.

MMBC provides a financial incentive to local governments to provide curbside collection. In turn these local governments deliver collection services and resident education, under contract to MMBC. To date, ten communities have asked MMBC to assume financial and operational responsibility for their collection service⁸². Eight of these local governments transitioned operational responsibility for existing collection programs to MMBC while two communities received PPP curbside collection services for the first time delivered by MMBC⁸³.

Prior to the launch of the MMBC PPP Stewardship Plan, PPP was collected by local governments, either directly or through contractors, by First Nation communities and through the services of private companies. While the types of PPP accepted in the collection system and aspects of the collection service were modified by MMBC to comply with the Recycling Regulation and Schedule 5, PPP continues to be collected by those entities previously delivering the service - local governments, First Nations and private companies.

Competitive procurement processes continue to be used by local governments and MMBC to select curbside collection contractors. Where MMBC is responsible for procurement, there have

⁸¹ “Where the market is characterized by few players and limited competition, contracting for services may not yield the lowest price that could be achieved in a dynamic, competitive market. Given MMBC’s role as the sole (or primary) buyer (i.e. a monopsony) of residential PPP services in British Columbia, contracting for recycling services may have the effect of depressing service provider prices. Over the longer term, depressed prices may force some service providers out of business leaving a more concentrated, less competitive market. Under an incentive system, service providers that meet MMBC’s technical requirements can deliver the service in exchange for the incentive available from MMBC. Incentives are typically set to reflect the price of existing market transactions and are then adjusted over time to reflect system performance and activities. Service providers accessing incentives have no right of exclusivity and approved service providers are able to compete with one another to maximize profit by managing the most PPP at the least cost possible, driving PPP activity, efficiency and innovation.” Multi-Material BC, *Packaging and Printed Paper Program Design Options* January 2012.

⁸² Cities of Langley, Revelstoke, Prince George, Quesnel and Coquitlam; Regional Districts of North Okanagan, Central Kootenay and Kootenay Boundary; the Village of Anmore; and the University Endowment Lands.

⁸³ In addition, the Cities of Vancouver and Pitt Meadows transitioned direct responsibility for PPP collection services to MMBC in the fall of 2016.

been instances where the incumbent contractor was the successful respondent while, in other instances, another bidder was awarded the work.

MMBC pays private companies a rate per household to provide collection to multi-family households. Private companies compete among themselves to service multi-family buildings.

MMBC pays local governments, First Nations and private companies a rate per tonne to provide depot collection. Where multiple depots operate in the same geographic areas, residents choose the depot (or depots) they wish to utilize, ultimately determining the success or failure of the competing depots. MMBC adds depots to fill geographic service gaps⁸⁴.

Most local governments that opted out of MMBC's program on September 16, 2013 subsequently asked to join. Based on the quantity of PPP supplied to BC residents by MMBC's producer members and the quantity of PPP collected by those that accepted MMBC's collection incentives by September 16, 2013, MMBC has achieved the required 75% recovery rate target. As such, MMBC responded to local governments wishing to join its program that their requests would be considered as non-compliant producers join MMBC.

Local governments and private companies that did not respond to MMBC's offer of the multi-family collection incentive and/or the depot collection incentive continue to collect residential PPP without financial support from MMBC.

Competition in PPP post-collection markets

Green by Nature (GBN), the consortium of three companies previously managing PPP in BC that was awarded a contract by MMBC, transformed approximately forty existing Material Recovery Facilities (MRF) into Receiving, Consolidation and Transfer facilities (RCTs) or Pre-Conditioning Facilities (PCFs). RCTs manage PPP collected as two or more streams, baling the fibres and shipping the containers to GBN's new container recovery facility (CRF). PCFs manage PPP collected as a single stream, sorting fibres from containers and pre-conditioning the containers to remove residue, steel and glass before shipment to the CRF. Investment in automated sorting equipment at the CRF yields a larger proportion of a broader range of containers at better quality than is possible in traditional MRFs. With the improved quality, plastic packaging sorted at the CRF is utilized by an end market located within 10 kilometres of the CRF, supporting local business and reducing the carbon footprint associated with the management of plastics⁸⁵.

Companies that responded to MMBC's post-collection RFP but were not awarded a contract and companies that did not respond to MMBC's post-collection RFP continue to operate. Some are part of the GBN system of RCTs and PCFs while others manage PPP collected by local

⁸⁴ MMBC added 24 depots in 2015.

⁸⁵ Although information on end markets prior to MMBC's program is anecdotal, the majority of plastics collected in BC prior to MMBC were reportedly shipped overseas for processing. The exception was foam polystyrene which was utilized within BC.

governments and private companies that are operating outside of MMBC's program and manage PPP from ICI sources.

The *Current System* report identified 24 organizations that each operated one processing facility and another four organizations that, together, operated 19 MRFs for a total of 43 facilities. The 40 MRFs that were incorporated into GBN's post-collection system represent virtually all of the MRFs that were operating prior to MMBC's program. These facilities plus the facilities operated by companies that manage PPP collected outside of MMBC's program continue to be in a position to respond to a future competitive procurement process.

Competition between PPP stewardship agencies

As discussed in section 3 and notwithstanding provisions in section 5(2) of the Recycling Regulation), there is generally no economic efficiency rationale for administering or managing competition between producers or stewardship agencies. While there may be many producers and stewardship agencies for a given product or material, as long as each entity can be regulated equally against their EPR obligations, their competitive or collaborative interactions in the market should be market-determined and subject to the Competition Act rather than the focus of administrative fiat.

However, the general case does not hold where an incumbent stewardship agency has established a collection network as a natural monopoly pursuant to regulatory requirements⁸⁶ and with a view to maximizing efficiency through scale. In this case, the producers who are party to the incumbent have, through their participation, capitalized the collection and post-collection system leaving those investments vulnerable to new entrants that are regulated to a different requirement under their approved stewardship plan.

In establishing the policy objectives and the rules, the MOE did not address how to deal with competition and collaboration at the stewardship agency level in the BC PPP market. This is the source of the Directors observation that, "It is clear to me upon review of the [StewardChoice] Plan that the MOE must undertake significant policy work to fully assess how competitive stewardship plans within a single extended producer responsibility product category should be administered"⁸⁷.

⁸⁶ See Ref. 11

⁸⁷ Competition policy issues also surfaced earlier in 2009 with the Director's decision to rescind the Western Canada Computer Industry Association's (WCCIA) stewardship plan. Here the Environmental Appeal Board noted that, "The essential complaint of the WCCIA goes to questions of policy and legislative intent. The WCCIA makes, what may appear to be, a fair point that the *Regulation* ought to be structured in a way to ensure that more than one competitor can occupy the position of electronic product recycling steward. The WCCIA may also have a fair argument that the Director ought to approve plans, relying upon his discretion, to ensure there is competition. However, these are not matters for the Board: they are matters for the Legislature, and for the Director within the exercise of his discretion. See Ref. 54.

However, while the Director identifies his policy conundrum as “how competitive stewardship plans within a single extended producer responsibility product category should be administered”, the issue with regard to PPP is more properly described as how competition should be administered where the government mandates producers to deliver household collection thus creating a natural monopoly⁸⁸.

6. Competition and the packaging and printed paper category

Building on the discussion of competition between stewardship agencies in the preceding section, this section focuses on answering the primary study questions at hand:

3. What are the legal and institutional best practices for introducing competition in EPR for PPP with a view to greater economic efficiency; and
4. What are the risks and benefits associated with competition at various levels within the PPP category.

6.1. Institutional best practices for introducing competition in producer compliance with EPR for packaging and printed paper

In theory, pure-from regulation of EPR could set only a recycling target eschewing even a minimum requirement for geographic coverage. In this scenario, based on experiences in other jurisdictions⁸⁹, producers and/or stewardship agencies would buy proof of compliance from service providers in the form of recycling certificates. Service providers would in turn vie to collect and process volumes of PPP to generate saleable certificates.

In this scenario, collectors would pursue collections from proximate and dense geographies that result in the most competitively priced certificates. If the aggregate collection target was set by government at a level such that sufficient certificates were generated by collecting materials in densely populated areas to achieve the target, rural and remote communities would likely be left un-serviced.

The clear risk in British Columbia is that this approach would likely not meet the provinces socio-political objectives of ensuring the broadest, non-discriminatory geographic coverage.

The requirement for household collection as a natural monopoly raises two questions:

⁸⁸ This issue has been the subject of much policy analysis, legal action and regulatory reform in Europe. See: *Competition in Select Extended Producer Responsibility Programs: Phase 1 – Jurisdictional Scan*. Prepared for the BC Ministry of Environment by Corporate Policy Group LLP, Glenda Gies and Associates Inc. and Chris Busuttill. March 2016.

⁸⁹ This is essentially the approach under the Producer Responsibility Obligations (Packaging Waste) in the U.K. Here producers purchase packaging waste recovery notes (PRNs) issued by accredited reprocessors and/or packaging waste export recovery notes (PERNs) issued by accredited exporters to satisfy their obligations directly. Producers may also join a PRO that purchases PRNs and PERNs on their behalf. See cite in Ref. 88. If this mechanism were to be utilized in a jurisdiction that had designated only residential PPP, additional enforcement resources would be required to ensure that, in seeking the lowest cost means of compliance, cheaper volumes of non-designated PPP (e.g. ICI PPP) are not being substituted to meet regulated targets. Both residential and ICI PPP are designated in the U.K.

- How can more than one PRO access what is now a common household collection system⁹⁰ as a natural monopoly and hence an essential facility; and
- How should individual producers with the means to self-comply for collection and post-collection management of their PPP do so?

Recommended approaches to providing producer access to a PPP common household collection system as an essential facility

Where more than one PRO forms to discharge producers' obligations for PPP, the essential facility must be available to, and supported by, all PROs. Rules for sharing the common household collection system are necessary to:

- Avoid disruption to the household collection services;
- Provide multiple PROs with access to the collection system and the materials required for compliance with performance obligations; and
- Ensure regulatory compliance by all PROs such that they can operate and fairly compete with one another and also so that their producer-members can fairly compete.

In European countries with multiple packaging compliance schemes, two types of mechanisms have been utilized to ensure the integrity and continuity of the common household collection system:

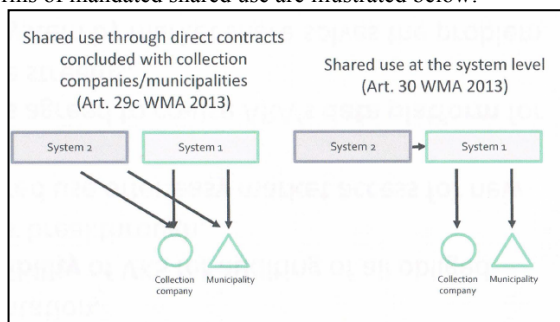
- Option 1: Physical material apportionment mechanism⁹¹; or
- Option 2: Mandated shared use of the common household collection system⁹².

To utilize Option 1: Physical material apportionment mechanism, the MOE must

⁹⁰It is possible for more than one stewardship agency to service a given geography. Here competing stewardship agencies would vie for household volumes of PPP on behalf of subscribing producers. However, collection costs – the single largest system cost – are fixed and would have to be largely duplicated by each competing stewardship agency. The economics, especially in an expansive and sparsely populated province, are daunting. In this case, the MOE would have to undertake verification of the volumes collected by geography by each stewardship agency to ensure compliance.

⁹¹ For example, in Germany where the 9 compliance schemes have jointly retained an independent party to receive data on the quantity of packaging supplied by each scheme's members, calculate each scheme's market share and allocate collected material to each scheme according to its market share. Concerns have arisen regarding accuracy of data provided by producers and compliance schemes to the independent party which does not have the power to ensure accurate compliance with the rules.

⁹² Austria has mandated that producers either contract with each municipality or contract with another PRO that has contracts with each municipality, with the result that all producers support collection from all households. The two forms of mandated shared use are illustrated below:



1. Develop:
 - An operating standard for the common household collection system;
 - Pro-forma terms and conditions for provision of household collection according to the operating standard;
2. Ensure:
 - Adequate receiving capacity in each collection area to accommodate unloading of PPP from vehicles used to service the common household collection system;
 - A mechanism to deliver household collection should a local government decide to no longer provide the service in favour of producers delivering the service directly;
 - A mechanism to resolve disputes regarding the form and condition of PPP when received by PROs; and
3. Implement a methodology to fairly allocate a proportionate share of PPP collected through the common collection system to each PRO taking into account:
 - Relative market share of each PRO (basket-of-goods and/or by material) based on the verified quantity of PPP supplied by each organization's members;
 - Quantity of household PPP collected in each geographic area⁹³ taking into account the relative proportion of collected PPP by source⁹⁴, form⁹⁵ and condition⁹⁶;
 - The schedule on which the quantity of PPP allocated to each organization will be adjusted to align with changes in the relative market share of the various PROs;
 - The schedule on which the quantity of PPP allocated to each organization will be reconsidered to accommodate a new PRO; and
 - The process by which the quantity of PPP allocated to each organization will be adjusted should a PRO exit the market.

To utilize Option 2: Mandated shared use of the common household collection system, the MOE must set rules prescribing that each producer (acting individually) and each PRO (acting on behalf of its members) agree to the following conditions:

1. Must share the existing common PPP household collection system:
 - a. At the collector level by entering into contracts with each collector⁹⁷; or
 - b. At the system level by entering into a contract with a PRO that has contracts with each collector; so that
 - c. All collectors are under contract to all producers, individually or through the PRO⁹⁸;
2. May not establish a new household collection service for PPP where households are already receiving household collection service; and

⁹³ To balance the distance travelled by PROs to pick up the collected PPP allocated to each organization.

⁹⁴ As the composition and quality of each source varies.

⁹⁵ Single-stream or multi-stream and loose or in single-use bags, as processing costs and the relative proportions of material captured vs remaining as residue are affected by these aspects of collection system design. The number of variables affecting the form of collected PPP may be reduced through use of an operating standard for the common household collection system.

⁹⁶ For example, the compaction ratio applied during the collection and/or transfer process and proportion of non-PPP in the collected materials which affect processing system design, efficiency and cost.

⁹⁷ Where a competitive procurement process is required to select the collection service provider, a mechanism for producers and PROs to collaborate to implement this process will be required.

⁹⁸ The terms of the contracts between producers/PROs and collectors (at the collector level) or between PROs (at the system level) should anticipate a new PRO entering the market or an existing PRO exiting the market.

3. Must provide adequate receiving capacity in each collection area to accommodate unloading of PPP from vehicles used to service the common household collection system.

Under Option 2, the contracts between producers/PROs and collectors (collector level) or between PROs (system level) would address the terms and conditions for provision of household collection, receiving capacity in each collection area, proportional allocation of PPP and dispute resolution that would be the responsibility of the MOE under Option 1.

Whether utilizing Option 1 or Option 2, the MOE must also undertake the following:

- Implement a system to identify and register PPP producers and receive and verify data on the quantity of PPP supplied by each producer in agreed material categories such that it, as the regulator, has the data necessary for enforcement of performance requirements;
- Set rules for producers switching PROs (e.g. end of a quarter);
 - To facilitate verification of accuracy of reported data;
 - To minimize opportunities for producers to under-report quantity supplied to avoid the costs of compliance;
- Establish clearly defined, measurable and enforceable performance targets and requirements in regulation;
 - So that the MOE is able to enforce targets and performance requirements;
- Establish penalties for non-compliance with targets and performance requirements that are higher than the cost to comply;
 - To make compliance more attractive than non-compliance;
- Ensure the accuracy of all data used to measure the performance of each producer and each PRO against their obligations; and
- Enforce performance requirements consistently, rigorously and without delay;
 - So that an underperforming individual producer or PRO does not gain a competitive advantage for more than one reporting period.

While the MOE has effectively established the PPP household collection system as an essential service through approval of the MMBC Stewardship Plan, the purpose of EPR regulation is economically-efficient environmental protection and not delivery of a particular collection system. Depending on innovation in alternative collection systems, the household collection system for PPP may lose its economies of scale (i.e. its network effects) if the market evolves past the current regulatory rules. The MOE should be vigilant in assessing if and when new rules are required.

Recommendations for individual producer compliance

A situation may arise where, despite there being such a collection network, a producer – say a retailer with a consumer take-back program – can achieve self-compliance, in whole, or in part for the collection and post-collection management of its PPP outside of the network.

Here, the MOE should ensure the operator of the common collection system or stewardship agency to which the producer is subscribing does not create barriers to exit. Additionally, if such a producer can only achieve self-compliance in part, it should be able to negotiate terms with the

stewardship agency or operator of the common collection network to purchase whatever the balance of materials it requires without fear of punitive action by the stewardship agency/network operator⁹⁹.

While it may be argued that many producers implementing take-back programs poses a risk to the economies of scale of the common collection system, it should be noted that the purpose of EPR regulation is economically efficient environmental protection and not the maintenance of a static collection system. Where the departure of a number of producers from the common collection system leaves it uneconomic for those remaining, it is up to those producers and the MOE to determine if innovation¹⁰⁰ has caused the market to evolve past the current regulatory rules and whether new rules are required.

Other key considerations and recommendations for competition in producer compliance

Setting recovery targets

Under the MMBC program, obligated producers report the quantity of PPP they supply to BC residents in 17 paper product categories and 36 packaging categories. As the quantity of PPP supplied is the denominator for the recovery rate calculation, these data could, theoretically, be used as the basis for material-specific targets for each of the 53 categories.

However, when PPP is collected from households¹⁰¹, all categories except glass are collected in one stream (in single-stream programs) or in a few streams (generally two or three streams). Inbound weigh scale tickets, common industry practice for tracking collected PPP, reflect the basket-of-goods collected and cannot be explicitly associated with a material-specific denominator for purposes of assessing performance. Significant effort would be required to determine a statistically valid composition of collected materials for purposes of enforcing material specific targets.

As well, producers and PROs may not collect (under Option 2: Mandated shared use) or be apportioned (under Option 1: Physical material apportionment mechanism) the same mixture of PPP in the same proportion as they supplied to residents.

For these reasons, a basket-of-goods target, in which the numerator is the total quantity of commingled PPP collected (without consideration of the composition) and the denominator is the total quantity of PPP supplied (without consideration of the composition) is a practical approach.

⁹⁹ This assumes that the MOE will enforce compliance on the producer to ensure that self-compliance does not become a backdoor to non-compliance (as an example, in the case of a retailer, the blending of ICI “back-of-store” PPP into volumes that are being claimed as recovered from consumers).

¹⁰⁰ The benefits of individual producer compliance are that it offers the opportunity for innovative collection systems that reduce producer compliance costs and which more fully engage consumers in a producer’s EPR and circular economy efforts.

¹⁰¹ Plastic film and polystyrene foam are not accepted in household collection systems but are accepted at depots.

A basket-of-goods target may lead to a focus on collection of materials with lower net costs. Where all PPP materials have equal environmental benefits and risks, collection of lower net cost materials to the detriment of higher net cost materials may be immaterial. However, if the MOE has identified particular environmental benefits to collecting certain materials (or risks from not collection certain materials), additional regulatory scrutiny could be put on these materials to ensure they are collected at sufficient rates.

Setting recycling targets

As residential PPP is typically blended with ICI PPP during consolidation, transfer, processing and marketing, it is generally not feasible to physical track the portion of collected residential PPP that has been recycled with precision. It may be possible to assess the efficiency of material capture and processing losses in facilities in relation to total inbound quantities which would yield the aggregate performance of the facility (and when added together, the system) for management of mixed residential and ICI PPP. Given the assumptions necessary for this calculation, these data may be helpful as general information but are likely not suitable for enforcement purposes.

Materials leaving processing facilities are destined for reuse, recycling, fuel or landfill. Prescribing acceptable recycling, and fuel and landfill options will ensure consistent and comparable reporting of the final destination of materials by producers and PROs.

Recommendations for oversight of performance against targets

Where more than one entity (i.e. PRO/stewardship agency/producers) will be compiling data and reporting performance, standard data compilation procedures and protocol must be used by all producers and PROs (and their service providers) to ensure that performance reporting is consistent and comparable.

As ICI PPP may be commingled with residential PPP during collection, a standard protocol to exclude this material from recovery rate performance reporting is required. Similarly, if the collection system accepts items other than designated PPP (e.g. books, or periodic collection of batteries or textiles), standard protocol to also exclude this material from recovery rate performance reporting is required.

As producers and PROs incur costs to collect and manage PPP to achieve performance targets, collecting less than required provides a competitive advantage.

Protocol and associated penalties should be explicit when the following situations arise:

- Relative recovery rate under-performance by a producer or PRO (e.g. different repercussions for missing a recovery target by 15% compared to 5%); and
- Relative end-of-life management performance (e.g. different repercussions for recycling 80%, burning 10% and landfilling 10% compared to recycling 95% and burning 5%) .

Similarly, timely enforcement is important so that failure to comply does not create a competitive advantage for an extended period of time.

If the time horizon for achieving a target is long (e.g. 5 years), producers and PROs may delay taking action so that they do not incur costs ahead of their competitors. Use of gradually increasing targets over successive reporting periods may moderate the use of such strategies. Graduated targets may also reduce the need to apply penalties for missed targets.

6.2. Risks and benefits associated with competition at various levels within the packaging and printed paper category

Harnessing competitive markets for the collection and post-collection management of PPP delivers economic efficiency. As discussed in section 5.7, competition is the premise on which PPP is collected and managed under EPR in BC today. As such, it poses fewer risks than any other market engagement strategy.

Assessing the benefits of introducing competition at the PRO/agency level involves assessing the additional costs of regulatory oversight necessary to foster competitive compliance among PROs sharing a common household collection system against the benefit of additional PROs reducing producers' compliance costs¹⁰².

The regulatory oversight, with the approaches and regulatory controls described in section 6.1, mitigate the risk of introducing competition and under such circumstances the risks are low. In summary, risk is low contingent on ensuring:

- Availability of data to set meaningful and measurable performance targets;
- Availability of sufficiently detailed and accurate data to enforce against the targets;
- Setting performance targets that are sufficient to stimulate innovation and induce activity to achieve the overarching environmental objectives;
- Compliance activities that are adequate in scope and timing to deliver a level playing field for PROs and producers; and
- Political will to enforce performance in a uniform and consistent manner.

¹⁰² Producer's costs of compliance are their internal administration costs for producing reports for MMBC plus the fees MMBC levies from producers for delivering the stewardship plan. MMBC recently modify its fee-setting methodology. This process was led by a Steward Consultation Committee and included 10 workshops. The Committee based their recommendations on the following set of guiding principles:

1. All obligated materials should bear a fair share of the costs to manage the packaging and printed paper program, irrespective of whether a material is collected because all obligated stewards who put obligated materials into the marketplace should contribute to the recycling system.
2. The material management costs allocated to each material should reflect the material's cost to collect and manage it in the recycling system because a material's unique characteristics can drive costs in distinctive ways.
3. The commodity revenue should be attributed only to the materials that earn revenue because materials that are marketed have value and should benefit from earned revenue.
4. Add promotion and education and/or market development costs to specific materials as needed.

Appendix A – Recycling Regulation Section 5

- 5 (1)** On receipt of a product stewardship plan submitted under section 4, the director may approve the plan if the director is satisfied that
- (a) the plan will achieve, or is capable of achieving within a reasonable time,
 - (i) a 75% recovery rate or another recovery rate established by the director,
 - (A) for each subcategory listed in section 4 of Schedule 1 for the beverage container product category, and
 - (B) for each product category covered by the plan, other than the beverage container product category, if required by the director,
 - (ii) any performance requirements or targets established by the director, and
 - (iii) any performance requirements or targets in the plan,
 - (b) the producer has undertaken satisfactory consultation with stakeholders prior to submitting the plan for approval and will provide opportunity for stakeholder input in the implementation and operation of the product stewardship program,
 - (c) the plan adequately provides for
 - (i) the producer collecting and paying the costs of collecting and managing products within the product category covered by the plan, whether the products are currently or previously sold, offered for sale or distributed in British Columbia,
 - (ii) with respect to the solvent and flammable liquids, pesticide, gasoline and pharmaceutical product categories,
 - (A) the collection of residuals and containers that are or were in direct contact with a residual, and
 - (B) the management of residuals and containers collected,
 - (iii) reasonable and free consumer access to collection facilities,
 - (iv) making consumers aware of
 - (A) the producer's product stewardship program,
 - (B) the location of collection facilities, and
 - (C) how to manage products in a safe manner,
 - (v) assessing the performance of the producer's product stewardship program, the management of costs incurred by the program and the management of environmental impacts of the program,
 - (vi) a dispute resolution procedure for disputes that arise between a producer and person providing services related to the collection and management of the product during implementation of the plan or operation of the product stewardship program,
 - (vii) eliminating or reducing the environmental impacts of a product throughout the product's life cycle, and
 - (viii) the management of the product in adherence to the order of preference in the pollution prevention hierarchy, and
 - (d) with respect to the packaging and printed paper category, the plan adequately provides for the collection of the product by the producer
 - (i) from residential premises, and
 - (ii) from municipal property that is not industrial, commercial or institutional property.

- (2) In deciding whether to approve the plan, the director may consider any of the following:
- (a) the advice of a committee of up to 12 persons the director appoints for the purpose of giving advice on the plan;
 - (b) the timelines and effectiveness of the plan respecting the matters referred to in subsection (1);
 - (c) the population and geographical area of the markets in which the producer sells, offers for sale, distributes or uses in a commercial enterprise the product;
 - (d) the manner in which the product is marketed and retailed by the producer;
 - (e) the nature of the product;
 - (f) the amount of product the producer expects to sell, distribute or use in a commercial enterprise each year;
 - (g) the amount of product the producer expects to collect each year;
 - (h) the size of the population intended to be served by each collection facility;
 - (i) the provision of convenient options for the collection of products in urban centres and small, isolated communities, and for persons with disabilities or who have no access to transportation;
 - (j) the manner, kind and amount of advertising and consumer education planned by the producer to inform consumers of the location and operation of collection facilities and the environmental and economic benefits of participating in the product stewardship program;
 - (k) the methods of product collection, storage, transportation and management;
 - (l) the product stewardship programs of other producers for products in the same product category;
 - (m) the structure of financial and operational co-operation with other producers.

(3) For the purposes of subsection (1) (c) (viii), the pollution prevention hierarchy is as follows in descending order of preference, such that pollution prevention is not undertaken at one level unless or until all feasible opportunities for pollution prevention at a higher level have been taken:

- (a) reduce the environmental impact of producing the product by eliminating toxic components and increasing energy and resource efficiency;
- (b) redesign the product to improve reusability or recyclability;
- (c) eliminate or reduce the generation of unused portions of a product that is consumable;
- (d) reuse the product;
- (e) recycle the product;
- (f) recover material or energy from the product;
- (g) otherwise dispose of the waste from the product in compliance with the Act.

(4) This section applies to

- (a) a director's approval of a producer's proposed amendment to an approved plan, and
- (b) a director's amendment to an approved plan.

(5) A director may amend an approved plan.

(6) An amendment referred to in subsection (5) takes effect on the date specified by the director.