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Extended Producer Responsibility (EPR) and the Impact of Online Sales

Mark Hilton,
Chris Sherrington,
Andrew McCarthy,
Peter Börkey

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EXTENDED PRODUCER RESPONSIBILITY (EPR) AND THE IMPACT OF ONLINE SALES – ENVIRONMENT WORKING PAPER N° 142

By Mark Hilton (1), Chris Sherrington (1), Andrew McCarthy (2), Peter Börkey (2)

(1) Eunomia

(2) OECD Environment Directorate

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ABSTRACT

Extended producer responsibility or product stewardship is a policy approach that aims to increase waste recovery and recycling. Extended producer responsibility (EPR) systems aim to make producers responsible for the environmental impacts of their products throughout the product chain, from design to the end-of-life phase. With about 400 EPR systems currently in operation across the globe, most of them in OECD member countries, these policies have become one of the key approaches in this area. While these systems have helped to increase recycling and collection rates, as well as generating financial resources to pay for these activities, governments are grappling with a number of issues that hinder their effectiveness and efficiency.

This report focuses on free-riding of producers or retailers, which the fast expansion of online sales in recent years has been exacerbating. Online sales are creating new free-riding opportunities as consumers are able to buy more easily from sellers in other countries. These sellers often have no physical, legal entity in the country where the consumer resides, and are not registered with national or local EPR schemes. The consequence is that they avoid producer and retailer/distributor obligations and costs, thereby undermining EPR systems. This report identifies some of the measures that governments and other stakeholders could consider in order to address this issue, including awareness raising, better enforcement of existing rules and the introduction of new regulatory measures.

Keywords: Extended producer responsibility, product stewardship, free-riding, waste management, circular economy, resource efficiency.

JEL codes: Q53, Q58

RÉSUMÉ

La responsabilité élargie des producteurs est une approche politique qui vise à accroître la récupération et le recyclage des déchets. Les systèmes de responsabilité élargie des producteurs (REP) visent à rendre les producteurs responsables des impacts environnementaux de leurs produits tout au long de la chaîne de production, de la conception à la fin de vie. Avec environ 400 systèmes de REP actuellement en service dans le monde entier, dont la plupart dans les pays membres de l'OCDE, ces politiques sont devenues l'une des approches clés dans ce domaine. Alors que ces systèmes ont contribué à augmenter les taux de recyclage et de collecte, ainsi qu'à générer des ressources financières pour financer ces activités, les gouvernements sont aux prises avec un certain nombre de problèmes qui entravent leur efficacité et leur efficience.

Ce rapport s'intéresse particulièrement au resquillage (free-riding) des producteurs ou des détaillants, que l'augmentation rapide des ventes en ligne au cours des dernières années a exacerbé. Les ventes en ligne créent de nouvelles opportunités de resquillage (free-riding) car les consommateurs peuvent acheter plus facilement à des vendeurs dans d'autres pays. Ces vendeurs n'ont souvent pas d'entité physique et légale dans le pays où réside le consommateur et ne sont pas enregistrés auprès des REP nationales ou locales. La conséquence est qu'elles évitent les obligations et les coûts des producteurs et des détaillants / distributeurs, ce qui tend à fragiliser les systèmes de REP. Ce rapport identifie certaines des mesures que les gouvernements et autres parties prenantes pourraient envisager afin de résoudre ce problème, comprenant des mesures de sensibilisation, le renforcement de la mise en œuvre de règlements existants et l'introduction de nouvelles mesures réglementaires.

Mots clés **:** Responsabilité élargie des producteurs, resquillage, free-riding, gestion des déchets, économie circulaire, utilisation efficace des ressources.

Codes JEL : Q53, Q58

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List of Acronyms and Abbreviations

ADF	Advanced Disposal Fee
AMTM	Australian Mobile Telecommunications Association
AR	Authorised Representatives
B2B	Business to Business
B2C	Business to Customer
BEIS	Department for Business, Energy and Industrial Strategy
CE	Conformité Européene
CWIT	Countering WEEE Illegal Trade
DTS	Distributor Take-Back Scheme (UK)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities
EEE	Electrical and Electronic Equipment
EHF	Environmental handling fees
EMC	EC Harmonised Standards on Electromagnetic Compatibility
EPR	Extended Producer Responsibility
EPRA	Electronic Products Recycling Association
EPSC	Electronics Product Stewardship Canada
ERP	European Recycling Platform
EU	European Union
GSP	Generalised System of Preferences
ICT	Information and Communication Technology
INTERPOL	International Criminal Police Organization
IOT	Internet of Things
IPR	Individual Producer Responsibility
LVD	EC Low Voltage Directive
MS	Member State
NEPSI	National Electronics Product Stewardship Initiative
OECD	Organisation for Economic Co-operation and Development
OEM	Original Equipment Manufacture
OVAM	The Belgium environmental authorities
POM	Placed on the Market
PR	Producer Responsibility
PSA	Product Stewardship Act
PRO	Producer Responsibility Organisations
PV	Photovoltaic
RoHS	Restriction of Hazardous Substances Directive 2002/95/EC
SSUTA	Streamlined Sales and Use Tax Agreement
UK	United Kingdom
USA	United States of America
VCA	Vehicle Certification Agency
VAT	Value Added Tax
WEEE	Waste Electrical and Electronic Equipment
WRAP	Waste and Resource Action Programme

1. Executive Summary

Background

Digitalisation holds many promises, to spur innovation, boost more inclusive and sustainable growth, and enhance overall well-being. But at the same time, digitalisation can also be disruptive, changing familiar structures and expectations of the economy, society and even politics, raising questions about how and when regulators should intervene, and new policy challenges with regard to privacy, security, trust, consumer policy, competition, innovation, jobs and skills.

This report focuses on the challenge that increasing online sales represent for Extended Producer Responsibility or Product Stewardship systems. Extended Producer Responsibility (EPR) – where producers are responsible for the environmental impacts of their products when they become waste – is an important environmental policy instrument. Around 400 EPR systems are currently in operation across the globe, with the majority relating to electronic and electrical equipment (EEE), packaging, tyres, or batteries. EPR systems have helped to increase recycling and collection rates, as well as generating financial resources to pay for these activities, but are in some cases becoming compromised by increased non-compliance – or free-riding – associated with the growth of online sales.

Online sales are creating new opportunities for free-riding as consumers gain improved access to sellers in other countries. These sellers often have no physical or legal entity in the country where the consumer resides, and are not registered with national or local EPR schemes. The consequence is that they avoid the obligations and costs associated with placing products on the market in those countries. This leads to three main problems:

- Free-riding that consists in not undertaking physical 'take-back' obligations leads to lower collection rates for end of life products
- Free-riding by not paying EPR fees challenges the financing of waste management activities
- Free-riding by under-estimating the number of products placed on the market results in a potential over-estimation of national recycling rates

This report provides an overview of the free-riding issues that arise in the context of EPR and online sales, and identifies current efforts and good practices that are being taken in response. To do so, the available literature was reviewed and additional information was gathered through stakeholder workshops and interviews. The focus of the report is on Electrical and Electronic Equipment (EEE), both because a large proportion of EEE sales that are now made online, and because EPR schemes focussed on EEE are the most widespread across the OECD membership. That said, many of the issues identified in the report are probably also relevant to product categories such as batteries and packaging. Due to the varying intensity with which these issues are being discussed across the OECD membership, there is an emphasis on the EU and European Free Trade Association (EFTA) countries. Where possible, the circumstances in the US and Canada have also been addressed.

Key insights emerging in this report

Online sales of EEE are now a major and growing part of retail in most OECD countries. A very significant proportion of these sales involve cross-border trade, and free-riding related to this is a growing concern. Some of the key insights emerging in this report are:

Scale of the problem: While speculative, as there is no hard data, the available information indicates that the overall scale of the online free-rider issue is likely to be between 5% and 10% of the value of the OECD Electrical and Electronic Equipment market. That said, online sales are of course growing, and there is significant variation from one territory to another and from one product category to another. Smaller countries, countries with larger import shares, and countries with relatively stringent EPR schemes are most likely to be affected.

Free-riding takes place for different reasons: A significant proportion of free-riding appears to be un-intentional, and driven by a lack of awareness among online sellers. Some Producer Responsibility Organisations (and in Europe, so called "authorised representatives") are making efforts to reach out to distance sellers to make them aware of their obligations and recruit them.

Other free-riding takes place in situations where sellers are aware of the relevant legislation. This behaviour persists partly because of the difficulty of enforcement. There are literally thousands of online sellers of EEE globally, and tracking individual transactions is highly resource intensive. Enforcement conducted by authorities beyond their jurisdiction often relies on goodwill and bilateral co-operation. Intentional forms of free-riding are probably also perpetuated by EPR regulations that are both complex and highly variable across jurisdictions. These issues make compliance a potentially daunting and very costly task for firms selling products into multiple territories or countries.

Type of online free-riders: Free-riding is neither just a small-seller issue, nor is it only confined to web sites in a specific region. In some cases even the largest and best known online platforms are not registered in all territories where they are legally required to participate in EPR systems.

Measures to address free-riding in the context of online EPR sales

There is no single, entirely effective solution to address online free-riding in the context of EPR schemes. However there are a wide range of potential options to help reduce the problem. The key is getting the balance right in terms of cost-effectiveness.

A wide range of stakeholders have been consulted during this study, including government agencies responsible for EPR implementation and oversight, producer responsibility organisations, online sales platforms, and producers. Taking into account the views expressed, some of the most promising ideas are presented below. These ideas represent preliminary suggestions rather than formal policy recommendations, the development of which would require further work and detailed consideration.

Potential policy responses are divided into three main groups: (i) awareness raising and simplified transaction tracking, (ii) strengthened enforcement through improved co-ordination across different jurisdictions and regulatory authorities, and (iii) harmonized and refined regulation. The first group of responses, and potentially some of the second group, can be considered 'lower hanging fruit': measures that could be quickly implemented to stem the tide of online free-riding. This could potentially address a large proportion of the problem. Changes to EPR regulations will, of course, take longer to implement, but may be necessary to effectively address those sellers that are deliberately avoiding their obligations, particularly where the seller does not have a physical or legal presence in the country of purchase.

Measures to raise awareness and simplify tracking of transactions

It seems likely that a significant proportion of the free-riding that takes place in the context of EPR and online sales is a result of a lack of awareness amongst sellers. As such, proactive awareness raising activities, undertaken by various stakeholders, could support more widespread compliance.

Potential initiatives include the development of **voluntary e-commerce codes of practice** and a role for Producer Responsibility Organisations in **undertaking additional promotional and awareness raising activities**. Multi-seller online platforms could **proactively inform sellers about their obligations with regard to EPR,** as well as potentially removing those that are non-compliant. The **exploration of technological solutions** (blockchain and smart contracts for example) to automate EPR processes and payments was also proposed.

Measures to strengthen enforcement

While awareness raising activities will help to address those firms that are simply unaware of their obligations with respect to EPR, there are also companies that are unwilling to pay the fees associated with compliance. There are a number of things that could be done to assist enforcement towards these companies.

Governments could require the development of a **single electronic register of producers for each jurisdiction,** to be published on the competent authority's website. In tandem, the development of simple mechanisms to allow Producer Responsibility Organisations, and registered producers and distributors, **to report any suspected free-riders** would assist enforcement. The development of mechanisms allowing **customs, tax and trading standards officials to work in a joined up fashion with the environmental authorities** would also help.

At the supra- and international level, **better co-ordination of enforcement action** would improve the cost effectiveness of enforcement by minimising the duplication of effort.

Regulatory measures

Awareness raising, smarter transaction tracking, and enforcement will help to address free-riding, but there may well be a need for the simplification, clarification, and harmonisation of existing EPR regulations.

In the medium term, the **development of a harmonised framework for registration** (in terms of the format and product coding used) would simplify administrative procedures across jurisdictions and lower compliance costs for producers. At the same time, governments could consider building **the ability to prosecute a company for illegal action in another country or territory into EPR legislation** in order to facilitate enforcement.

There are also various regulatory measures that could be undertaken in the longer term. For example, governments could focus on the continued **simplification and harmonisation of Extended Producer Responsibility regulations**, ensuring that the obligations of online sellers are clear and available in plain language.[1] EPR legislation could also be strengthened in several ways. Web sites that sell **EEE under their own name could be required to show the Producer Responsibility Organisations registration details** (or the Authorised Representatives acting on their behalf in the case of EU countries) on their respective websites.

[1] 2016/C 272/01 – Commission Notice: The 'Blue Guide' on the implementation of EU Product Rules 2016.

2. Introduction

2.1. Background

Since the late 1980s, the concept of "Extended Producer Responsibility" (EPR) has become an established principle of environmental policy in most OECD countries and also beyond. It aims to make producers responsible for the environmental impacts of their products throughout the product chain, from design to the post-consumer phase. It was hoped that this would relieve the burden on municipalities and taxpayers for managing end-of-life products, reduce the amount of waste destined for final disposal, and increase rates of recycling.

A recent survey identified about 400 EPR systems currently in operation across the globe, most of them in OECD member countries. Nearly three-quarters were established since 2001. Legislation has been a major driver, and most EPRs appear to be mandatory rather than voluntary. Small consumer electronic equipment accounts for more than one-third of EPR systems, followed by packaging and tyres (each 17%), end-of-life vehicles, lead-acid batteries and a range of other products. While in some cases individual firms have established their own systems, in most cases, producers have established collective EPR systems managed by Producer Responsibility Organisations (PROs).

In 2001, OECD produced a Guidance Manual to support the development of EPR systems, which was updated in 2016. This work addresses a number of issues, including the governance of EPR systems, competition aspects, incentives for more environmental product design, as well as the challenges that arise due to the presence of a large informal sector. The OECD Guidance also identified free-riding – where the firms placing products placed on the market do not meet their legal obligations under EPR legislation – as an important challenge to many EPR schemes.[2] [3] [4]

The advent and fast expansion of e-commerce and online sales (Box 2.1) in recent years is creating new free-riding opportunities as:

- consumers are able to buy more easily from sellers in other countries that often have no physical legal entity in the country where the consumer resides; and
- online sellers are not registered with national or sub-national EPR schemes, hence avoiding producer and retailer/distributor obligations and costs.

As noted in the 2014 Global Forum on Environment: Promoting Sustainable Materials Management through Extended Producer Responsibility (EPR):[5]

[2] OECD (2001), Extended Producer Responsibility – Guidance for Efficient Waste Management.

[3] OECD (2013), What Have we Learned about Extended Producer Responsibility in the Past Decade?: A Survey of the Recent EPR Economic Literature.

[4] OECD (2016), Extended Producer Responsibility – Guidance for Efficient Waste Management, Paris.

[5] The State of Play on Extended Producer Responsibility (EPR): Opportunities and Challenges. Global Forum on Environment: Promoting Sustainable Materials Management through Extended Producer Responsibility (EPR). 17-19 June 2014, Tokyo, Japan.

The rise in internet sales is a clear challenge for EPR in all countries, and particularly in OECD countries where online markets are beginning to achieve significant market share. Products sold online frequently free ride on EPR systems. This phenomenon is especially noticeable among small-scale internet sales companies that are difficult to identify and can more easily act as free riders. This puts national producers who are contributing to EPR schemes at a competitive disadvantage. The issue is exacerbated in markets where it is difficult to identify manufacturers, especially in emerging economies characterized by large counterfeiting and second-hand sectors and illegal importers/exporters.

Box 2.1. What is e-commerce or online sales?

In the OECD Guide to Measuring the Information Society (2011), an e-commerce transaction is defined as the sale or purchase of goods or services, conducted over computer networks by methods specifically designed for the purpose of receiving or placing of orders. The goods or services are ordered by those methods, but the payment and the ultimate delivery of the goods or services do not have to be conducted online. An e-commerce transaction can be between enterprises, households, individuals, governments, and other public or private organisations. To be included are orders made over the web, extranet or electronic data interchange. The type is defined by the method of placing the order. To be excluded are orders made by telephone calls, facsimile or manually typed e-mail.

2.2. Scope of the report

Electric and Electronic Equipment (EEE) is a highly relevant product category for online sales, representing around 20 – 30% of the total market in Europe and the US (see Section 5). EEE is also important in the context of existing EPR legislation; schemes that focus on EEE waste are the most common within the OECD membership. These two observations provide the rationale for focussing on EEE in this report. That said, many of the findings and recommendations that emerge will likely have some relevance to other product categories.

Free-riding on EPR schemes can have negative implications for domestic competitiveness in a similar way as for product counterfeiting, non-adherence to domestic product standards (including safety standards), and the avoidance of import duties and Value Added Tax (VAT). In each case, non-compliance with domestic regulations can create a market advantage for firms operating outside of the territory. That said, compliance with EPR schemes represents the main focus of this report.

Through a wide ranging literature review, and through consultation with various stakeholders via meetings, interviews and two workshops, this report aims to examine:

- The issues surrounding online sales of EEE and the related impacts on WEEE EPR systems in OECD countries in Europe and North America, including identification of their nature and, to the extent possible, their scale; and

- Current activity and good practice in responding to the challenges faced by the EPR schemes and regulators in OECD countries.

This work was carried-out through a wide ranging literature review using known sources, and a broader internet search that focused on the EU, US, Canada and Australia. Subsequent to the literature review, a workshop was held in Bern on March 10Th 2017, supported by the European Commission and the Swiss Government. Further meetings were held at VIL (logistics research and innovation) in Mechelen (Belgium) and at OVAM, the public waste management agency in Flanders on March 22nd 2017, both to discuss the situation and good practices in Belgium. A workshop organised by the WEEE Forum on 13 September 2017 in Brussels, also provided input to the report. Further interviews were held with stakeholders in the UK, USA and Canada (Appendix 1).

It should be noted that this report constitutes a first exploration of the issues and is not intended to provide a comprehensive assessment of *all* the issues relating to online sales for each type of WEEE EPR scheme in *all* OECD countries or to investigate *all* possible solutions. It has, however, allowed the identification of a broad consensus on the issues involved and the need for further action, as well as some of the potential ways to deal with the free-riding problem. Due to the varying intensity with which free-riding in the context of EPR and online sales is being discussed across the OECD membership, there is an emphasis on the EU and European Free Trade Association (EFTA) countries. Where possible, the circumstances in the US and Canada have also been addressed.

3. Characterising the issue

3.1. Online sales and free-riding in the context of EPR schemes

Non-compliant sellers can create two main problems in the context of WEEE EPR schemes. First, unregistered sales can lead to under-estimation of the number of products placed on the market (POM), and therefore overestimates of national WEEE recycling rates. Second, free-riding – either in the form of not undertaking physical 'take-back' obligations or in terms of not paying a share of the cost of WEEE collection and reprocessing – can threaten the overall financial viability of EPR based waste management systems.

This study focuses on the latter, noting that free-riding increases the proportion of WEEE that requires financing by correctly registered producers.[6] 'Free-riding' means that products can (depending on the type of EPR system) be left 'orphaned', without anyone to take responsibility for their end-of-life, or more commonly leaving other legitimate producers that are registered in-country having to take (additional) responsibility and pick up the bill. This places an additional burden on responsible companies and hinders their competitiveness as a result. A major challenge for EPR is to ensure that free-riders are not gaining a competitive advantage over registered and compliant producers.

Box 3.1. The types of online sellers considered in this report

There are at least three variants of online seller considered in this report:

- Singer-seller online platforms involve original equipment manufacturers (OEMs) and their dedicated (licenced) retailers marketing products online. It is therefore possible to buy EEE direct from the manufacturer or retailer without having to visit a "bricks and mortar" store.
- Multi-seller online platforms operate in much the same way except that they market products from multiple sellers, and are owned and operated by third party (non-manufacturing) firms. One important consequence of this structure is that these platforms act purely as intermediaries, without necessarily becoming owners of the products they sell. This generally means that multi-seller online platforms are not considered to be producers or importers for the purposes of EPR legislation.
- There are other online sellers that blend aspects of both the above business structures. For example, although Amazon is well known for marketing products produced by other firms, the company also markets a range of its own product lines (the Kindle range of e-readers for example).

3.2. The diversity of free-riding activity

Free-riding in the context of EPR schemes involves a diverse set of activities. It can include producers that are registered with a producer responsibility organisation (PRO) but that are

[6] In a recent study by the WEEE forum of its members, the vast majority (10:1) noted that unpaid WEEE fees rather than the absence of physical take-back systems was the key issue (Personal communication from the WEEE Forum with Excel data from the unpublished survey).

not fully declaring their POM figures, producers that are not registered at all, and retailers or distributors that are avoiding their take back obligations. There are also related issues around import and subsequent export of products, making tracking complex in regard to any potential rebate of fees in a given territory.

It is worth noting that online sales can link buyers and sellers situated in the same country (i.e., where the EPR system operates), or buyers and sellers in different countries. Three other settings can also be envisaged:

- within an economic bloc, most notably the EU (where the same broad rules apply via the WEEE Directive);
- within other OECD countries where similar systems also often apply and are well-known;
- in emerging and developing economies, most notably some Eastern European and Asian countries, where EPR systems may be less common.

In the context of online sales, the potential magnitude of the free-riding problem will tend to increase when:

- Online sales account for a significant proportion of the product market;
- Significant price differentials exist between countries, meaning a high likelihood of consumers seeking to purchase online from overseas;
- Products have a relatively low bulk and weight relative to their value, meaning that shipping charges for products purchased via overseas e-commerce retailers will be relatively low in proportion to the product value.

Online sales of small consumer electronics, and higher value small domestic appliances and hygiene products (e.g. electric toothbrushes) therefore represent an important product category. Small consumer electronic equipment accounts for more than one-third of that dealt with by EPR systems[7]. Larger domestic appliances are typically only handled by retailers with either 'bricks and mortar' retail outlets or physical distribution centres in the country; they represent less of an issue from an EPR enforcement perspective.

Enforcement of the obligations of producers and sellers based within countries with an EPR system, while not simple, is relatively straight forward due to the ability to raise awareness and enforce regulation directly. However, for regulators to identify and deal with non-compliance, free-riding and illegal activity in other countries, or even within different States or Provinces in the USA and Canada respectively, is a far more difficult issue.

A key overarching challenge relating to online sales and EPR, particularly where items are purchased online from retailers based in third countries, is the lack of data about such transactions. This is not necessarily due to online retailers seeking to avoid transparency as to the destination of products purchased from their site. For instance, Chinese sites will usually sell and ship to the EU or USA through a variety of shipping methods.

There are examples however, where online retailers based in one country will not ship certain products to other countries, including BestBuy.com, the market leader for EEE in the USA.[8] However, in response to this issue (which many consumers see as an impediment

[7] OECD (2013), What Have we Learned about Extended Producer Responsibility in the Past Decade?: A Survey of the Recent EPR Economic Literature.

[8] Interestingly, Macy's and Target both indicate on their websites that they have now teamed up with a company called Borderfree to offer international sales. While Borderfree notes that it ensures compliance with all import taxes and duties, it is unclear whether EPR requirements are met.

to their freedom to purchase items at reduced prices online), a 'work-around' has been devised in the form of 'package forwarding companies' such as Borderlinx, Viabox , Myus, Bongous, and Shipito. These companies will sell a consumer the use of an address, typically based in a location where sales tax is low or non-existent. Items purchased on American websites can then be delivered to this address, from where they will then be forwarded to the consumer's actual address in other countries around the world. Similar companies operate in Europe (for example AlfaSent in the UK).

Furthermore the Generalised System of Preferences (GSP) for import into the EU allows products from a range of developing countries to pay a lower rate of import duty, hence potentially allowing a further potential loophole in the form of package forwarding through these countries.

In summary, it is clear that there are a number of potential avenues for free-riding related to online EEE sales, both deliberate and unintentional. Section 4 outlines some of the relevant features of a number of WEEE EPR systems within the OECD. The extent of the issue is discussed in Section 5 while Section 6 addresses existing good practice. The report concludes with a discussion of possible means of action.

4. WEEE Regulations and EPR

To put the study into context it is important to understand the fundamental aspects of, and differences between, the WEEE EPR systems in place in different OECD regions. This report describes systems in Europe, the USA, Canada and Australia.

4.1. The EU WEEE Directive

Directive 2002/96/EC on waste electrical and electronic equipment was the first Directive to address how to improve the environmental management of WEEE and to enhance the resource efficiency of collection, treatment and recycling of electrical and electronic equipment at the end of its life.[9] It entered into force in February 2003 and provided for the creation of collection points at retailers and/or public collection points where consumers can return their WEEE free of charge. The aim of these systems was to increase the collection rates and to ensure the proper treatment of WEEE.

Directive 2002/96/EC and its amendments were repealed by Directive 2012/19/EU, known as the WEEE Recast (hereafter the WEEE Directive) and this became effective on 14 February 2014. Article 2(1) of the recast Directive widens the scope of the Directive 2002/96/EC on WEEE ("the old WEEE Directive" in this report) from 10 categories, to effectively all electrical and electronic equipment (EEE), set out under six broad categories (from August 2018). This is important as confusion over scope (i.e. what is in and out) can affect the free-rider issue. Confusion over scope and proper classification is still a significant concern for cross-border distributors selling a wide selection as classification schemes are not aligned between Member States.

The definitions of producer and distributor are also very relevant and are provided in Box 4.1 and Box 4.2.

[9] Directive 2002/96/EC of the European Parliament and of the Council of 27th January 2003 on Waste Electrical and Electronic Equipment (WEEE) (OJ L 37/24 of 13.2.2003).

Box 4.1. Definition of a producer

'Producer' (Article 3(1)(f)) means any natural or legal person who, irrespective of the selling technique used, including distance communication within the meaning of Directive 97/7/EC of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts:

(i) is established in a Member State and manufactures EEE under his own name or trademark, or has EEE designed or manufactured and markets it under his name or trademark within the territory of that Member State;

(ii) is established in a Member State and resells within the territory of that Member State, under his own name or trademark, equipment produced by other suppliers, a reseller not being regarded as the 'producer' if the brand of the producer appears on the equipment, as provided for in point (i);

(iii) is established in a Member State and places EEE? on the market of that Member State, on a professional basis, EEE from a third country or from another Member State; or

(iv) sells EEE by means of distance communication directly to private households or to users other than private households in a Member State, and is established in another Member State or in a third country.

Box 4.2. Definition of a distributor

'Distributor' (Article 3(1)(g) means any natural or legal person in the supply chain, who makes EEE available on the market. This definition does not prevent a distributor from being, at the same time, a producer. Furthermore Article 16(1) of the WEEE Directive states that:

Member States shall, in accordance with paragraph 2, draw up a register of producers, including producers supplying EEE by means of distance communication. That register shall serve to monitor compliance with the requirements of this Directive

Producers supplying EEE by means of distance communication as defined in Article 3(1)(f)(iv) shall be registered in the Member State that they sell to. Where such producers are not registered in the Member State that they are selling to, they shall be registered through their authorised representatives [AR] as referred to in Article 17(2).

With regard to producers as defined above, Article 17(2) of the Directive states that:

> *the Member State in which they are established shall ensure that these producers appoint an authorised representative [AR] in the Member State(s) to which they sell EEE by means of distance communication while not being established in that Member State(s), in order to have somebody ensuring compliance with their obligations as producers.*

The aim is to reduce free-rider activity, but of course, this still requires enforcement in the particular Member State which is not a simple matter. Each producer, or their authorised representative (where appointed under Article 17 of the Directive), has to be registered and have the possibility of entering all relevant information online in their national register reflecting their activities in that Member State. It should be noted that the EU Commission is intending to implement common registration and reporting requirements in 2018, even though these will only implement harmonized rules for reports from compliance schemes to the national registers[10].

Moreover, *"producers are allowed to set up and to operate individual and/or collective take-back systems for WEEE from private households". In any case, according to Article 12 "each producer shall be responsible for financing the operations referred to in paragraph 1 relating to the waste from his own products. The producer may choose to fulfil this obligation either individually or by joining a collective scheme".* These collective schemes are Producer Responsibility Organisations (PROs), often formed by producers, which in turn, must usually be authorised by the national authority.

The collection, treatment and accounting system for WEEE collected and treated must both demonstrate that the general national targets are met but also that each producer can demonstrate it has fulfilled its individual obligations. In general EU countries have one or more collective schemes (Producer Responsibility Organisations; PROs) that take on responsibilities on behalf of the producers. Fees are generally charged back to producers once the collective costs are known on an annual basis and apportioned based on a market share calculation from declarations of what each producer has put on the market (POM).

In terms of distributors (generally the retailers), *"when supplying a new product, distributors are responsible for ensuring that such waste can be returned to the distributor at least free of charge on a one-to-one basis as long as the equipment is of equivalent type and has fulfilled the same functions as the supplied equipment". In addition, "distributors provide for the collection, at retail shops with sales areas relating to EEE of at least 400 m2, or in their immediate proximity, of very small WEEE (no external dimension more than 25 cm) free of charge to end-users and with no obligation to buy EEE of an equivalent type".* A Derogation for these retailer obligations is allowed in the UK where there is a Distributor Take Back scheme to support alternative free collection in municipalities but in other European countries take back at retailers is a mandatory requirement.

It is also worth noting that under Article 18, Member States have to ensure that authorities responsible for implementing the Directive co-operate with each other, in particular to establish an adequate flow of information between national registers to ensure that producers comply with the provisions of the Directive. The Commission publishes lists of competent bodies on its web pages to facilitate this and the German Environment Agency has set up a network to share information on free-rider prosecutions.

[10] http://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-754618_pt

4.2. EPR Systems for WEEE in Canada[11]

Several Provinces in Canada have WEEE EPR systems that have to deal with the EEE imported into Canada, mostly via the USA. Canada's WEEE system is very different compared to the EU's in that there is no harmonizing federal law and the Provinces/Territories have total regulatory jurisdiction over WEEE Stewardship. While each province has slightly different regulations, there are only two comprehensive PROs for WEEE; EPRA, the Electronic Products Recycling Association, and ARMA, the Alberta Recycling Management Authority. The WEEE categories used for EPR are harmonised across Canadian Provinces, which facilitates reporting for producers and distributors.

ARMA covers WEEE in Alberta and Northwest Territories, while EPRA deals with EPR regulations in British Columbia, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland & Labrador. Yukon has recently passed regulations for WEEE. EPRA is an industry-led, not-for-profit organisation and deals with around 100,000 tonnes of old electronics each year managing government-approved programs that are established by manufacturers, retailers and other obligated entities to collect and responsibly recycle end-of life electronics. Electronics Product Stewardship Canada (EPSC) is a national non-profit and industry-led organisation which works with both industry and government to develop a flexible, effective and efficient Canadian solution.

Most Canadian jurisdictions with regulated EPR programs obligate the First Seller or First Importer in their regulations to address WEEE products coming from outside of their jurisdiction. Several Provinces have introduced language in Regulation that has helped with out of Province sellers by identifying Stewards as; *"a person who:*

> *(i) sells, offers for sale or distributes unused, obligated electronic products in the Province,*
>
> *(ii) is the owner or licensee of a trademark under which obligated electronic products is sold or distributed in the Province, whether or not the trademark is registered, or*
>
> *(iii) imports the obligated electronic product into the Province for sale or distribution."*

A key component of the funding model adopted for the implementation of EPR in Canada includes the use of environmental handling fees (EHFs). These fees, which are paid by obligated stewards and may be passed on to customers at the point of purchase, are determined on a per unit basis and can vary between provinces depending on the costs required to operate the program, such as the costs associated with collection, transportation, and processing. Although the costs can vary between provinces, the basis for calculation is harmonized across provinces and categories to be per unit, which simplifies the reporting and collection of EHF.

The fees that stewards must pay to EPRA for managing their WEEE are reviewed and adjusted as required. Also important to note is that EHFs are to be charged only once in the supply chain, although they may be passed down through the product supply chain to the

[11] Information taken from interviews with EPRA, EPSC (Electronics Product Stewardship Canada) and Environment and Climate Change Canada and the following reference: Giroux Environmental Consulting. 2016. Key elements of Extended Producer Responsibility and Product Stewardship Programs in Canada: Benchmarking study. Prepared for the Canadian Council of Ministers of the Environment.

final consumer. Inflation of the fees through the supply chain is a significant concern, and voluntary use of a 'visible fee', that the consumer can see on their store receipt is encouraged for B2C products such as consumer electronics.

As with the sale of most goods and services in Canada, consumers pay sales tax on the purchase of electrical and electronic equipment. If the EHF is built-in to the price of the product, then it will also be taxed as part of the total product price. It is important to note, however, that while the applicable tax is remitted to government, no part of the EHF itself is remitted to government, only to EPRA or ARMA.

EPRA has also done a lot of work in educating internet sellers so that they participate in paying the appropriate Provincial recycling fees. EPRA has been able to engage internet sellers from out of country, even when they do not have established 'bricks and mortar' distribution centres in Canada. Alibaba, for example, was outside the system until it established a warehouse in Vancouver (British Columbia), and is now registered in regard to all Canadian sales to provinces with EPR regulation. Amazon only has fulfilment centres in Ontario and British Columbia, but is registered with EPRA and ARMA's WEEE programs in all provinces except Quebec where the obligations are different to other provinces in regard to distance sellers.

EPRA note that, while it can be a laborious process, they have been able to audit some of the large players including Amazon in Canada and the USA, using annual auditing techniques to check on what has actually been sold against what has been declared under the EPR system. The right to audit is built into EPRA and ARMA's standard membership terms with stewards.

Finally it is worth noting also that in Canada, the entity responsible for c, Canada Border Services Agency (CSBA), is a federal agency and they can only collect taxes, not environmental fees at the Provincial level, hence this approach is not possible as a simplification.

4.3. EPR Systems for WEEE in the USA

US experts agree that ensuring all sales of: (1) new and/or no-name products and (2) internet sales are captured under EPR is challenging.[12] They believe that strengthening laws to reduce or prevent products slipping through current programs is important to level the playing field with the manufacturers that are in compliance.

The legislation surrounding, and enforcement of, Extended Producer Responsibility (EPR) in the USA varies widely between states, given that there is no legal framework provided at the federal level. Product specific EPR measures for end of life batteries began in some states in the mid-1990s, but take-up has been slow with other types of waste, including electronics.

At present 26 states have some sort of WEEE EPR or recycling bill that require brand owners (notably not importers or sellers, distance or otherwise) to undertake activities to increase the collection and recycling of waste electronics. These all differ in terms of registration procedures and reporting requirements hence requiring significant resources

[12] Communication from the US EPA in response to the draft report.

from the original equipment manufacturers (OEMs)/brand owners. PR programs often require each manufacturer to register with the state regulatory agency.[13]

From 2001 to 2004, Minnesota participated in the National Electronics Product Stewardship Initiative (NEPSI), an ultimately unsuccessful attempt to develop a national product stewardship approach in the US for WEEE.[14] In July 2007 they implemented their own WEEE scheme that included Video Display Device and Covered Electronic Device. The scheme is funded by manufactures that are responsible for ensuring that products are recycled and they face fines should they fail to reach designated recycling levels. Fees are collected from registered manufactures by The Minnesota Department of Revenue who also collect fines when goals are not met.[15]

To encourage the manufactures to collect WEEE for recycling from the more remote areas in the state as well as in the cities where collection is easier, a credit of 0.5 pounds is added to each pound of WEEE collected outside of the main city area. This appears to be an effective way of ensuring that recycling facilities are available for all.[16]

As Manufacturers, collectors and recyclers are required to register with the State, unregistered manufactures cannot sell their VDDs and retailers can only sell registered brands to consumers (including retail, online sales and catalogue sales). Both of these compulsory regulations help to prevent free-riders.[17]

In Minnesota it is interesting to note that laptops and mobile phones were taken out of the EPR scheme as it was considered that the market itself would work where products such as these had good residual value. That said, evidence from Canada and Europe shows that consumers often hoard phones for various reasons including concerns over data security.

Experts attribute the success of the EPR programs in the United States to[18]:

- Outreach and Communication: In the US where EPR laws exist, manufacturers/ brand owners and retailers carry the sole legal responsibility for EPR. Most manufacturers/ brand owners and retailers have a physical domestic presence and therefore, identifying them and communicating with them about the laws and their specific responsibility is fairly straight forward.
- EPR Network: There is an informal state EPR network across the US. If a state identifies a non-registered, new and/or no-name product or illegal internet sale, the information is shared quickly and discussed across the network.
- Consequences: If unregistered products are found to be sold outside the EPR laws, retailers/ manufacturers are required to block the sale of the product. Without sales the manufacturer/ brand owner will usually come into compliance quickly.

[13] Hickle, G. T. (2013), Comparative Analysis of Extended Producer Responsibility Policy in the United States and Canada.

[14] Product Stewardship in North America and Europe: Prepared for Department of the Environment, Water, Heritage and the Arts on behalf of the Waste Policy Taskforce June 2009.

[15] Ibid.

[16] Ibid.

[17] Ibid.

[18] Communication from the US EPA in response to the draft report.

Some stakeholders in the USA have been calling for Congress to assume a greater role in developing EPR in order to achieve higher levels of consistency between State level approaches.[19]

4.4. EPR systems for WEEE in Australia

The Product Stewardship Act (PSA) was implemented in Australia in 2011.[20] It is a flexible approach to EPR that recognises that each product and industry is unique and that one EPR legislation would be difficult to enforce across the board. The PSA provides a framework that allows for industries and products to be regulated in several ways, while also making provision for voluntary activities:

- Voluntary accreditation of schemes encourages product stewardship without the need for regulation and provides the community with certainty that accredited schemes are actually achieving what they claim. Product stewardship organisations that are accredited under the legislation must meet specific requirements that ensure they carry out their activities in a transparent and accountable manner
- Co-regulatory product stewardship schemes are delivered by industry and regulated by the Australian Government. The exact requirements are detailed in separate regulations for each scheme. Televisions and computers are the first items to be regulated under the co-regulatory provisions in 2009
- Mandatory product stewardship places a legal obligation on parties to take certain actions in relation to a product. Requirements that can be placed on parties using the legislation include the labelling of products, making arrangements for recycling products at end of life, or requiring a deposit and refund to be applied to a product.

4.4.1. Televisions, Computers and Computer Peripherals

In 2011–12, over 15 million televisions, computers, monitors and printers were imported into Australia, along with over 22 million computer parts and peripherals. In total, an estimated 140 000 tonnes of these products were brought into Australia, around 6kg for every Australian.[21]

The Product Stewardship (Televisions, Computers and Computer Peripherals) Regulations 2011 commenced on 8th November 2011 and requires Australian importers and manufacturers of televisions and computers to join and fund government-approved, industry-run co-regulatory arrangements, which are then able to collect and recycle products on their behalf at over 660 collection points across Australia.[22] The scheme supplements state, territory and local government e-waste management, but does not entirely replace these activities.[23]

[19] Hickle, G. T. (2014), Moving beyond the "patchwork:" a review of strategies to promote consistency for extended producer responsibility policy in the U.S.

[20] Environment Australia (2017), Product Stewardship.

[21] Environment Australia (2013), National Waste Reporting 2013.

[22] Ibid.

[23] Department of the Environment and Energy (2017), National Television and Computer Recycling Scheme.

Thresholds apply to limit the impact of the scheme on small businesses by exempting companies that import or manufacture fewer than 15,001 computer parts or peripherals or 5,001 televisions, computers or printers per year.[24] There are a number of administrators meaning that there is competition in the system which provides options for different liable parties and as all recycling service providers have to be certified to a specific standard (AS 5377) there is a consistent level of service across operators.[25] Importantly, the Australian Customs and Border Protection Service are required to provide data to the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC), to support the operation of the Schemes.[26]

4.4.2. Mobile Phones

There is no mandatory stewardship programme for small consumer electronics, however, MobileMuster is a recycling program for mobile phones run by the Australian Mobile Telecommunications Association (AMTA).[27] It is funded voluntarily by its members, including handset manufacturers, battery distributors and mobile phone network service providers who all pay an advance recycling levy of 42 cents for every handset they import into Australia. A small recycling rebate is also received, offsetting around 3 per cent of the program's costs.[28]

MobileMuster was initiated by the AMTA in 1999 to collect and recycle handsets, batteries and accessories from a network of over 4500 mobile phone retailers, local councils, government agencies and business drop-off points across Australia. The recycling service is free to consumers, schools, businesses, local councils and government agencies.

In 2011/12, a collection rate of just over 51 % was achieved in terms of the mobile phones available for recycling.[29]

[24] Department of the Environment and Energy (2017), National Television and Computer Recycling Scheme – Operation of the Scheme – Fact Sheet.

[25] Lexology (2017), North American WEEE EPR - Lessons From Australia.

[26] Australian Department of Immigration and Border Protection (2010), Customs and Border Protection Notice No. 2010/56.

[27] Environment Australia (2013), National Waste Reporting 2013, Factsheet – Other Product Stewardship Arrangments.

[28] Ibid.

[29] Ibid.

5. The Extent of Freeriding in the Context of Online EEE Sales

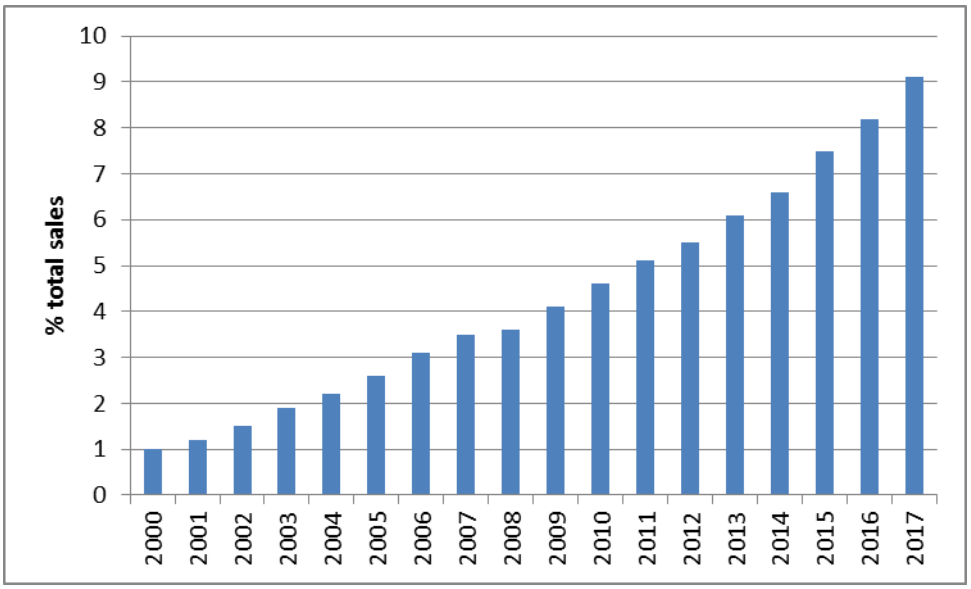
5.1. E-Commerce Market Trends

The research conducted for this paper suggests that online sales are growing rapidly in OECD countries, and that EEE represents a considerable share of these sales. In addition, it appears that a very significant proportion of online sales of EEE involve cross-border trade. This section summarises the available data.

5.1.1. Online sales as a share of total retail sales

Data from the United States Department of Commerce indicates that e-commerce sales in the United States amounted to USD 115.3 billion in the third quarter of 2017.[30] This represents around 9% of total retail sales, which is a significant increase over 2008 (3.5%) and 2000 (1%) levels (Figure 5.1). According to the same source, online sales in the United States during this period have been growing around nine times faster than traditional in-store sales.[31] If current rates of market penetration continue, online sales will likely represent 18% to 21% of total retail sales in the United States by 2025.

Figure 5.1. United States e-commerce retail sales as a proportion of total sales



Source: US Department of Commerce. Data provided via the Federal Reserve Bank of St Louis.

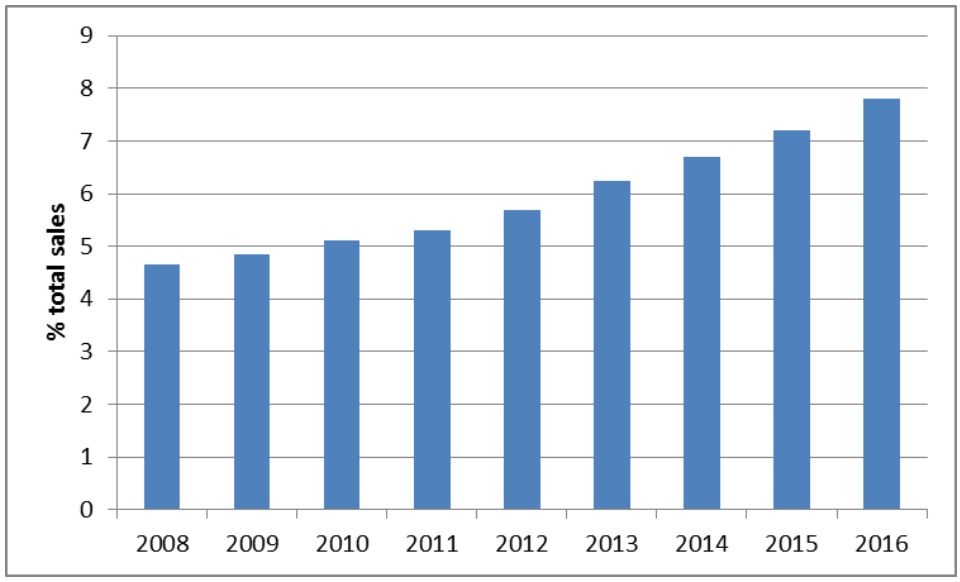
Online sales have also been growing rapidly in Europe, having increased from around EUR 201 billion in 2015 to EUR 233 billion in 2016.[32] Figure 5.2 shows the growth of online sales in Switzerland.

[30] US Department of Commerce (2017), Quarterly Retail E-commerce Sales.

[31] US Department of Commerce (2017), New Insights on Retail E-commerce.

[32] Centre for Retail Research (2017), Online Retailing: Britain, Europe, US, and Canada 2017.

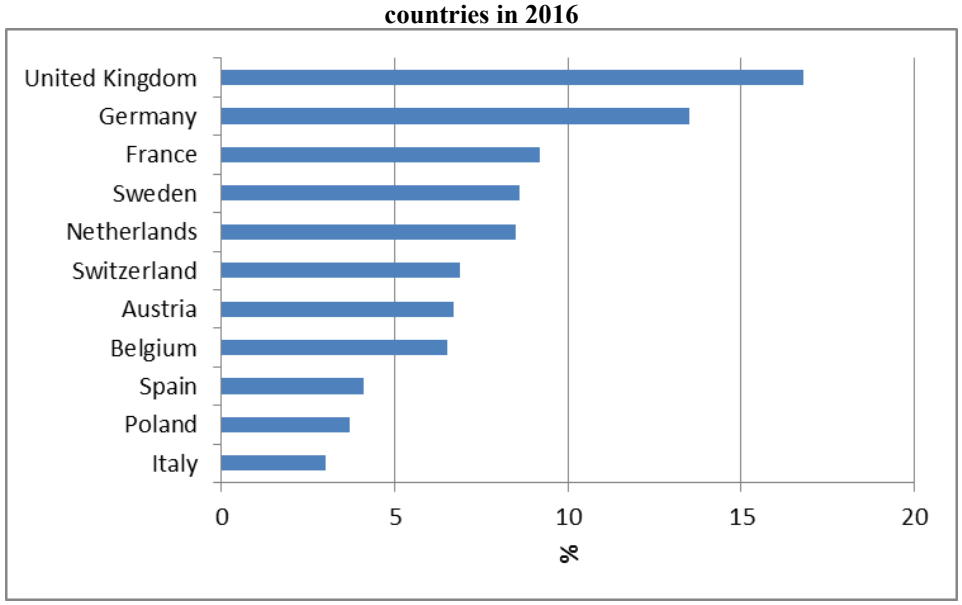
Figure 5.2. Switzerland e-commerce retail sales as a proportion of total sales



Source: Data from the Swiss Retail Federation provided at a workshop in March 2017 in Bern, Switzerland.

In terms of market share, online retail sales had attained between 3% and 17% of total sales in a selection of European countries in 2016.[33] The highest shares were found in the United Kingdom and Germany, and the lowest shares in Poland and Italy (Figure 5.3).

Figure 5.3. E-commerce retail sales as a proportion of total sales in selected European countries in 2016



Source: Centre for Retail Research (2017).

[33] Centre for Retail Research (2017), Online Retailing: Britain, Europe, US, and Canada 2017.

5.1.2. EEE as a proportion of online sales

Official data on the composition of online sales is relatively scarce. However, available information indicates that consumer electronics represent an important category. In the United States, computer and consumer electronics accounts for the largest share (around 22%) of all online sales.[34] In the EU, the online EEE retail market share is thought to be in the order of 30%, but with some variation between countries. In the UK, consumer electronics appear to be the largest online sales product category by value, with 29% of online sales being EEE in 2015.[35] In Belgium, online sales represented ~24% of the value of all electrical and electronics sales in 2015.[36] In Switzerland the figure is believed to be around 29%, with 18% of online retail sales as a whole (all products) being cross-border.[37] The Swiss Retail Federation also estimates that around 22 million parcels cross the border every year, of which at least 25% contains EEE.

Purchasing home electronics online is particularly popular in Germany, the Netherlands and the United Kingdom; nearly four out of ten people who have shopped online have bought an item in this category.[38] Mintel estimated that in 2015 around 48% of all electrical and electronic good sales in the UK were made online.[39]

5.1.3. The origin of online EEE sales

According to a survey for Eurostat, a large majority of e-shoppers make online purchases from sellers in their own country (Figure 5.4). However, a significant and growing proportion of online sales also involve sellers located in other EU countries (32% in 2016) and sellers from outside the EU (20% in 2016).[40]

In the UK, around 34% of online EEE sales involve multichannel retailers such as Argos and Dixons (which also have physical stores across the UK). Online sales for these retailers now represents up to 70% of their total sales.[41] Ordering online and collecting the product in store is becoming an increasingly common trend.

[34] eMarketer (2014), US Retail Ecommerce Sales Highest for Computers, Consumer Electronics.

[35] Mintel (2015), Online retailing – UK – July 2015.

[36] Ken Research (2016), Electrical and Electronics Retailing in Belgium - Market Summary and Forecasts.

[37] Data provided by the Swiss Retail Federation at a project meeting.

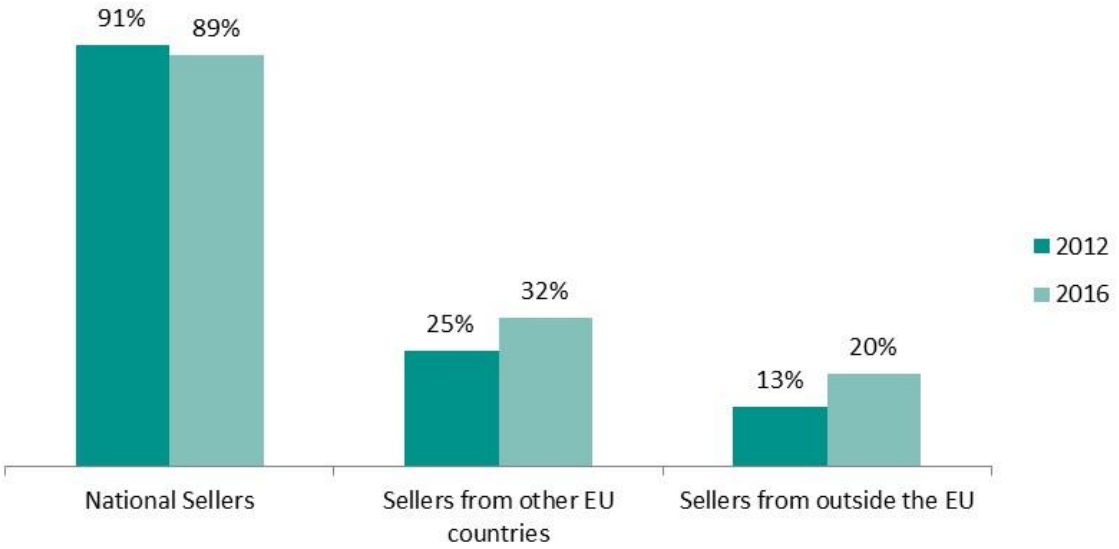
[38] Postnord (2015), E-Commerce in Europe 2015.

[39] Mintel (2015), Online retailing – UK – July 2015.

[40] Eurostat (2017), E-commerce statistics for individuals.

[41] Simon Bryant (Associate Director of Consumer Electronics) in China Daily (2016), E-commerce sales of consumer electronics products expanding.

Figure 5.4. Proportion of online shoppers in the EU buying nationally and overseas



Source: Eurostat: E-commerce statistics for individuals

In 2015, 58% of British online consumers also bought a product overseas, mostly from Chinese, German, or United States based websites.[42] Of those shoppers, 44% say that they are likely to buy consumer electronics or computers.[43] Mintel's research in the UK indicates that internet retail sales made by companies without stores were expected to overtake online sales by store-based retailers for the first time in 2015.[44] Data from the e-commerce consultancy Salmon indicates that Amazon currently accounts for 37% of online spending in the UK,[45] however eBay, Best Buy (USA), Alibaba (China), JD.com (China) and DHGate (China) are also likely to be important.

An analysis by Slice Intelligence found that 43% of all online retail sales in the United States went through Amazon in 2016.[46] According to the study, which analysed more than 4 million online purchases, Amazon accounted for the majority (53%) of the growth in US e-commerce sales for the year. Amazon has now displaced Walmart as the second-largest retailer of consumer electronics, and will likely surpass Best Buy in the coming years.[47] In Europe, data from Mintel indicates that Amazon took around 20% of the online EU market for electricals in 2013, while its closest competitor captured a share of less than 4%.[48]

[42] Postnord (2015), E-Commerce in Europe 2015.

[43] PWC (2017), How do consumers shop?

[44] Mintel (2015), Online retailing – UK – July 2015.

[45] Salmon (2017), The Dominance of Amazon.

[46] Business Insider UK (2017), Amazon accounts for 43% of US online retail sales.

[47] Quartz (2016), Amazon will soon dethrone Best Buy as the top seller of consumer electronics.

[48] Mintel (2014), Amazon dominates online electrical goods retailing in Europe.

5.2. Estimating the Potential Extent of Free-Riding

While many of the stakeholders consulted in the WEEE sector agree that online sales are an increasing challenge for EPR systems, there are very few estimates of the actual scale of the EEE online free-riding issue. The estimates that do exist are largely based on a set of underlying assumptions.

A study by WRAP and Valpak estimates that 7% of the EEE placed on the UK market in 2015 (133,000 tonnes) was sold by unregistered companies (free riders).[49] The authors state that this could be because "they are unaware of the regulations e.g. small companies based abroad selling through market place sites may not be familiar with UK regulatory requirements". The assumption is that much of this is made up by PV panel producers who are less aware of the regulations since they have only been obligated for two years. An additional 5% of the EEE placed on the UK market (99,000 tonnes) is estimated to have been exempt from the scope of the regulations in 2015, but may come into the 'Open Scope' in 2019. While there is uncertainty about the accuracy of these numbers and they therefore need to be treated with caution, they are the best available estimates based on current data and analysis..

The UK Department for Environment, Food and Rural Affairs (Defra) notes that online freeriding is a smaller challenge in the UK than in other countries due to the fact that it is a large market with all of the large players present in 'bricks and mortar' stores and/or distribution centres.[50] That said, it was noted by one stakeholder that the national register of producers only has a very small percentage of overseas companies. Examining the UK public register of producers under the WEEE Regulations found that there are 5,490 in total broken down as follows:

- Number of UK-based producers: 5,153 (94%)
- Number of producers outside the UK: 336 (6%)
  - EU 202 (4%)
  - US 71 (1%)
  - China 7 (< 1%)
  - Others 56 (1%)

This shows that a significant number of overseas EEE sellers are represented, although the fact that only 6% of sellers are overseas, and that a very high proportion of British people buy online from overseas sites (See Section 5.1) implies that there are likely to be a significant number missing. It should be noted that some web-sellers may be owned by other companies that are listed, complicating the checking process for enforcement authorities.

In the UK, the Government Department for Business, Energy and Industrial Strategy (BEIS) undertakes monitoring of the consumer-facing provisions of the WEEE Regulations (using the Vehicle Certification Agency (VCA) from 2007 to 2014). Retail stores, including those registered with the distributor take-back scheme (DTS, which removes the need to take back WEEE) and those that are not, are checked (using a mystery shopping market

[49] WRAP and Valpak Consulting (2016), EEE Flows Report.

[50] Interview with Graeme Vickery, Senior WEEE Policy Advisor at the UK Department for Environment, Rural, and Food Affairs.

research approach) in relation to fulfilling their obligations around consumer information and take back. In January 2015, 45% of non-DTS stores and even 24% of those in the DTS were non-compliant with their obligations.[51]

Similar information is available from Japan, where an investigation in 2016 by the Ministry of Environment found that many online sellers subjected to the large WEEE recycling act, are not fulfilling their obligations. Among 616 online sellers identified, 483 failed to comply with the obligation to inform consumers about the collection fee, and 445 sellers did not provide required information about recycling.[52]

In terms of enforcement for distance sellers, during the period April 2014 to March 2015, 605 inspections were conducted (DTS 172, Non DTS 433) and VCA noted that it was particularly challenging to build effective communications with retailers who are not DTS members and that internet enforcement has proved to be "more problematic in one particular area" (although it does not say where). Nonetheless VCA note that enforcement visit figures do reflect a generally positive response by distributors who initially were non-compliant and have since worked with the Agency to achieve compliance.

The only other information on the extent of the online freeriding issue is based on previous survey work, the internet evidence noted above, and the anecdotal evidence from stakeholders in this study. In a recent Eunomia study concerning the accuracy of EU waste statistics, the majority of stakeholders thought that the National Registers used by EU Member States for reporting EEE placed on the market were reasonably accurate.[53] None of the selected representative Member States reported specific concerns regarding this issue and noted that the WEEE recast Directive has helped to harmonise registration and reporting obligations for producers. Feedback from a few stakeholders, however, suggested that they believed that the data was only 'fairly' accurate and that it did not account for 'free riders' who are illegally placing products on the market without registering with the appropriate authorities.

In the same study, some stakeholders stated that online sales involving 'distance sellers' online are the most significant issue as the seller is generally not registered and there is no physical entity in the country (since the EEE comes straight to a customer's property via a courier or postal service).[49] It was recognised that this is a growing issue due to the increasing popularity of online sales. It was suggested, however, that the absolute tonnages being imported through private sales were still minimal compared to the total amount of EEE placed on the market within the EU.

Several stakeholders interviewed for the current OECD study expressed the view that the main issue is with smaller online and specialist EEE sellers with legal entities in Asia. The findings from a recent survey of WEEE Forum members are less specific; the vast majority of respondents believed that EU and non-EU, as well as large and small online sellers are involved in free-riding.[54]

[51] UK Vehicle Certification Agency (2015), VCA Enforcement Report for BIS April 2014 to March 2015.

[52] Presentation slides prepared for the Ministry of Environment of Japan, www.env.go.jp/council/03recycle/y032-36/mat03_3.pdf.

[53] European Commission (2017), Study on Waste Statistics – A comprehensive review of gaps and weaknesses and key priority areas for improvement in the EU waste statistics.

[54] Personal communication from the WEEE Forum with Excel data from the unpublished survey.

It has become apparent in the course of this study that even large online sellers are not registered in every jurisdiction or necessarily fulfil all of their obligations. It was noted by Canadian stakeholders that even the well-established sites with a physical presence in Canada sometimes do not fully meet their obligations and auditing is required (in Canada and the USA) to check and bill additional charges. While enforcement is more problematic wherever there is no 'bricks and mortar' presence and no legal entity in the countries, there is not always a correlation. For example, Belgian stakeholders noted that Amazon is registered with Recupel in Belgium, despite having no physical presence there. In the area of packaging, some PROs (e.g. Citeo in France) have been able to enrol all major online sales platforms.

It is important to note that many of the larger online platforms host many other sellers. For example, all of the transactions facilitated by eBay involve third party sellers. Further, while around 50% of Amazon's sales are direct, it also acts as a market place for tens of thousands of third party sellers.[55] [56] Third party sellers operating on online sales platforms, such as Amazon and Alibaba, are independent businesses who have contractually agreed with these platforms to meet legislative requirements. The platforms usually provide third party sellers with information regarding their legal obligations when placing EEE on the EU internal market, but do normally not police registration and reporting of each marketplace participant.

Freeriding on EPR schemes is likely to be far greater challenge in certain WEEE categories than others. The recent WEEE Forum survey showed that small EEE devices (small domestic appliances, IT, consumer electronics, lamps, tools and toys) are the types of devices considered by its PRO members to be most affected by free-riding.[57]

Recolight, the UK compliance scheme that specialises in lighting lamps, notes the following: "We believe that one of the largest online sales platforms, while registered with ERP as the UK PRO, only declares its own brand EEE products. This leads us to believe that the level of free riding taking place may be very high, our estimate being 2,500 tonnes or more of UK Category 13 per annum through sales of that firm alone. Given that the 2015 tonnage of household EEE in UK Category 13 was 11,413, this could represent over 20%. LED lamps are much more robust than previous technologies (incandescent and CFL) and are also relatively light weight. That makes LED lamps ideal for distance selling, and this is a major reason for huge growth in online sales."

In terms of who is placing the products on the market, Recolight note that large online sales platforms typically use language such as "Sold by [company name] and fulfilled by [online platform name]." Recolight believe that the contractual arrangement with the overseas supplier is such that the supplier is responsible for the import of the product and delivery through to the online platform's warehouse. Consequently, while the sale is being made through the online platform, and fulfilled via their warehouse, the legal responsibility still lies with the overseas supplier.

Given the information noted above, it is clearly not a simple task to estimate the true extent of online related 'free riding' in regard to EEE sales. However, some form of informed and

[55] Statista (2017), Percentage of paid units sold by third-party sellers on Amazon platform as of 3rd quarter 2017.

[56] Fortune (2017), Amazon's Third-Party Sellers Had Record-Breaking Sales in 2016.

[57] Personal communication from the WEEE Forum with Excel data from the unpublished survey.

conservative estimate can be made. Assuming that online EEE sales represent 30% of all EEE sales, and that 10% to 30% of these sales involve unregistered sellers,[58] would mean that around 3% to 9% of overall EEE sales are non-compliant. A recent survey of 11 PROs in the EU found that non-compliance rates were thought to be around 13%, although these are very rough estimates.[59]

Eurostat data indicates that about 9.2 million tonnes of EEE was put on the market in the EU in 2014.[60] If EPR non-compliance rates are in the order of 5% to 10%, then this would translate into 500 000 to 1 000 000 tonnes of unfunded (for EPR purposes) EEE per year. It should be noted that this estimate is likely to be an upper bound given that it extrapolates from one category of WEEE (i.e. small EEE devices, particularly suitable for online sales) to all WEEE.

Box 5.1. Impact of free-riding in Switzerland

The scale and the impact of free-riding vary from one country to another. Smaller countries, states and provinces, and those with more stringent EPR schemes or stronger currencies, appear to suffer disproportionately from the effect of overseas and online sales of EEE.

Switzerland has a voluntary EPR system with three PROs, one for ICT, one for lighting, and one for household appliances. An Advanced Disposal Fee (ADF) is charged via the retailers and occasionally adjusted to reflect the costs of WEEE recycling.

Buying outside of Switzerland, for example in Germany or France has always been common as the borders are easy to cross with few customs checks. Switzerland has also seen a considerable appreciation of its currency recently, which makes shopping in the neighbouring countries attractive, and online shopping makes this even easier. Around 10% of all Swiss retail purchases are thought to be abroad, and 29% of the ICT and consumer electronics market is online. The Swiss EEE EPR, SENS eRecycling, estimates that around 5% of ICT sales are not declared to the EPR system roughly in line with the estimates noted above in Section 5.2.

As a consequence, EPR related WEEE recycling funding in Switzerland has been dropping (significantly for one PRO) while the amount of WEEE has not. This creates a situation where the available funds are inadequate to do the job required. Increasing the ADF would only increase the move to online and other foreign purchasing. It has been suggested that introducing a mandatory requirement to join a PRO would deal with about 60% of the cost deficit, but still leaving a further 40% deficit due to free-riding.

[58] These estimations were checked for plausibility through three expert workshops and expert interviews (see annex 1).

[59] Personal communication from the WEEE Forum with Excel data from the unpublished survey.

[60] Eurostat (2017), Waste statistics - electrical and electronic equipment.

6. Issues and Existing Good Practice

6.1. Complex and ambiguous regulation

6.1.1. Overview

For sellers in other countries, the complexity of regulation can be quite bewildering. Work by consulting firm Eunomia for Toshiba shows that, even for a large and well-resourced corporation, understanding and dealing with different WEEE obligations in different countries presents a real challenge.[61] Inadvertent non-compliance can present a significant reputational risk for firms, and hence a lot of resources can go into checking what needs to be done.

Even in the EU (where there is a single WEEE Directive), there are 28 interpretations of the law, many different PROs, most probably in excess of 1,000 national WEEE compliance scheme reporting categories, and at least 28 different approaches to registration, financing and reporting. In the US, there are 26 different sets of state regulations. Canada now has 10 provincial laws for WEEE and two territorial regulations.

The clearer and more harmonised regulation is the simpler it is for producers and hence the lower the risk of accidental free-riding. It is noted that the EU Commission is intending to implement a common format for reporting of PROs to national registers in 2018 which could help the situation for online sellers, although it is understood that this is not harmonising the producer registration requirements per se.

6.1.2. Ambiguity in Scope

A lack of clarity in the scope of EPR rules is one aspect of this complexity that affects the potential for confusion and free-riding. Using the EU as an example, the scope of the original WEEE Directive (including 10 categories and various exemptions) caused considerable doubt in some areas over what was and was not included. In addition to EU guidance, some Member States also produced guidance. The UK notably developed a 'decision tree' and other guidance to help potential producers establish if their products and operations were in scope. A similar 'decision tree' is now included in updated EU guidance. (http://ec.europa.eu/environment/waste/weee/legis_en.htm).

The situation in the EU has not been helped by inconsistencies between the WEEE and RoHS directives and the use of the 'binding list' of products that are subject to the WEEE directive (Annex II of the old Directive and Annex IV in the recast). The 'binding list' was/is non-exhaustive and hence, while helpful in some ways, could potentially be interpreted to exclude products that are not explicitly listed.

In addition, there is some uncertainty around the difference between B2C and B2B products. Some products– laptops for example – may be used in both a domestic and a professional context, and the producer may therefore need to define which is the case (as B2B products may not always be part of the mandatory targets or financing arrangements).

[61] Various studies on Implementation of WEEE and RoHS in the EU and neighbouring countries.

The UK has also produced guidance in relation to B2C and B2B interpretation, including further information which is publically available on the GOV.UK website.[62]

Box 6.1. EU Registration Requirements and Authorised Representatives

From the point of view of enforcement, having a single and publically available electronic register of producers in a country, state or province is critical as it allows registered retailer peers, and the authorities, to check whether distance sellers are represented.

Some stakeholders view the Authorised Representatives (ARs) as an unnecessary additional layer of administration where there is one or several existing and strong PROs (which can also take on the role of AR). In many countries the risk of taking over responsibilities not only for WEEE registration and reporting, but also for complying with technical standards (e.g. ROHS), marking and information requirements, is relatively high as the AR has to bear any fines for non-compliance in the first instance. This leads to relatively high service fees for the AR and is therefore especially a hindrance for smaller online sellers.

An AR can be helpful, however, in terms of supporting overseas sellers to do the right thing, particularly where they can act across several countries, and it has been pointed out that some ARs have been proactive in seeking clients in other countries including China. In this sense the ARs are taking on an awareness raising role, for business reasons, that may otherwise fall to regulators. It is also pointed out, however, that some EU Member States have few if any ARs as the role can involve taking on liabilities which can be risky if overseas sellers do not comply in providing data.

It is also worth noting that the recast Directive is complex and with some ambiguity in regard to ARs as Articles 16 and 17 seem somewhat inconsistent; 16 suggests that any distance seller needs an Authorised Representative in an MS it is selling into and refers to Article 17, but this only refers to those selling from one MS to another as needing an AR. Interpretation of this AR requirement seems to vary across Member States, although the Commission has provided guidance in the relevant FAQs.

[62] UK Department for Business, Energy, and Industrial Strategy (2015), Business to consumer (B2C) and business to business (B2B) EEE and WEEE: how to correctly identify.

6.1.3. Good practice

It is worth emphasising the importance of creating regulations that are explicit about the definition of a producer, and about how distance sellers and online platforms fit within the framework. Electronic Product Stewardship Canada (EPSC) notes that several Provinces have introduced language in regulation that identifies a Steward as *"a person who:*

(i) sells, offers for sale or distributes unused, obligated electronic products in the Province,

(ii) is the owner or licensee of a trademark under which obligated electronic products is sold or distributed in the Province, whether or not the trademark is registered, or

(iii) imports the obligated electronic product into the Province for sale or distribution."

The Irish WEEE Regulations are more explicit and demanding than those typically found in other EU Countries. In particular, they include separate clauses regarding distance sellers who, among other things, are required to, (i) fulfil their take-back obligations, (ii) display their WEEE producer registration number on their website, and (iii) retain records for at least two years of the amount of WEEE taken back each year. In addition, the Irish Government also provides very clear guidance for distance sellers on their website. In terms of scope issues, the definition of dual use B2C Equipment has also been clarified as "waste from EEE likely to be used by both private households and users other than private householders, shall in any event be considered to be WEEE from private households".

The UK also has helpful Government Guidance Notes, excerpts from which include the following:

- A distance seller (e.g. an internet retailer, mail order retailer, or a tele-sales retailer) also needs to fulfil the obligations of providing free take-back facilities for consumers of EEE. This can be done by, (i) joining the Distributor Take-back Scheme, (ii) allowing these sales to qualify for in-store take-back through one of their local stores (where these exist), or (iii) providing the customer with an alternate route for free take back
- Distributors who are distance sellers must tell consumers how they can dispose of WEEE. This can be done through their mail-order adverts, website content, or through leaflets included with purchases. Offering "collection on delivery" does not release distance sellers from their take-back obligations under the Regulations in the event of a consumer choosing to return WEEE themselves.

The UK also has an example of good practice in that their WEEE Regulations explicitly state that: "A producer who is established in the United Kingdom and who places EEE onto the market in any Member State other than the United Kingdom by means of distance communication will comply with their obligations under the Directive in that Member State." This means that if the regulators from another Member State point out that UK online sellers are not meeting their obligations elsewhere, there is a legal means to prosecute them in the UK. It is not known if this facility has been used.

Another stakeholder noted that true Individual Producer Responsibility (IPR),[63] is becoming increasingly possible with the emergence of the Internet of Things (IOT) and

[63] Under individual producer responsibility, producers are directly and individually responsible for end-of-life products, rather than collectively through producer responsibility organisations.

product tracking technology. This may allow the fees currently charged to producer sellers and importers to be directed solely to the original equipment manufacturer (OEM) or brand owner. This approach has considerable potential because OEMs and brands are far fewer in number than sellers, and are generally also large corporations with reputations to uphold.[64]

6.2. Enforcement and prosecution

6.2.1. Overview

As was concluded in earlier OECD work on EPR, there is a lack in monitoring and control by public authorities and of related enforcement mechanisms to ensure effective operation of EPR schemes.

There are various forms of illegal activity related to imports of EEE into OECD countries. It falls on various sets of regulators (customs, trading, and tax authorities etc) to track, prevent and prosecute counterfeit goods, standards compliance, import duty and VAT evasion. Tracking free-riding on EPR schemes is an additional issue that normally falls on the environmental regulators who often have many issues to deal with (including various forms of waste crime and non-compliance with other environmental regulations) and limited resources available.

There are literally thousands of web sellers of EEE globally (many operating through multi-seller marketplaces such as Amazon and eBay) and hence tracking their activities is a major challenge. The key issue is the level of resource it takes to track online sellers, particularly where they are based in the geographically distant jurisdiction. In most cases the authorities in one country, state, or province have limited ability to investigate or prosecute in another territory directly. As pointed out by more than one stakeholder in this study, action often requires bilateral goodwill as international law enforcement agreements would not cover such things as environmental charges.

[64] This point was discussed at a expert workshop in Bern on 10 March 2017.

Box 6.2. Irish and Flemish Enforcement

The Irish EPA noted that they would generally only consider investigating online sales originating in the EU and have only prosecuted a single company in Ireland to act as a warning to others. Resource constraints are such that only 80 web sites (all B2B) have been investigated in 2015 with the same number planned for 2017. The Irish EPA also noted that chasing companies in China or the US would generally not be considered due to the likely difficulty of obtaining a positive outcome versus the effort that would be required. It was also noted that B2C sales are currently not addressed.

A national authority can, however, approach counterparts in other territories to ask for their assistance in chasing non-compliant firms that are based there. This may not, of course, be their priority and in any case the law may not allow for the prosecution of illegal activity in a different territory (although this is possible as noted in the UK good practice example in 6.1). The only lever is often the offer of reciprocal support should that be needed.

In Belgium, the WEEE PRO Recupel report that they are able to undertake auditing in Luxembourg and the Netherlands for example, and that all of the biggest online players are registered, although it is understood that some do not fulfil their takeback obligations. The Flemish authorities work with German and Dutch counterparts who assist investigations. The Public Waste Agency of Flanders in Belgium (OVAM) cannot shut down a website in Belgium for non-compliance but they can impose fines on a Belgian legal entity.

OVAM have investigated around 51 companies recently and sent letters setting out what they need to do to be compliant. Six months later, only 7 (14%) are now compliant, 6 have chosen to withdraw from the Flemish market and 38 (75% of the 51) remain non-compliant. This is a striking indication of the problems that enforcement agencies face and again it was noted that it is the smaller sellers outside of Europe that present the greatest difficulties, it often being hard to even find the correct legal entity in Far Eastern countries for example.

What is apparent is that each country, state or province has similar enforcement issues and the regulators in each are independently investigating potential free-riders which are often the same companies. This creates a lot of inefficiency in an area that is already very resource constrained.

Finally, a recent report for the European Commission on waste data accuracy in the EU, noted that governments have little incentive to tackle the issue of free-riding as it means that there is a greater quantity of 'unreported' WEEE to collect, which makes the achievement of the targets easier.[65] It is clearly in the interests of legitimate producers, however, to help the authorities identify free-riders so as to reduce compliance costs and illegal competition.

[65] European Commission (2017), Study on Waste Statistics – A comprehensive review of gaps and weaknesses and key priority areas for improvement in the EU waste statistics.

6.2.2. Good practice

Given the existing funding constraints, several stakeholders noted that it is important to use intelligence-led risk-based investigation and enforcement rather than a 'scattergun' approach. In Ireland for example, the EPA reacts mainly to web-sites that have been brought to their attention by legitimate and registered peers (i.e. sellers in Ireland) or by the authorities in other EU countries. Assuming that the company in question is not registered, directly, via a PRO or through an authorised representative (in the EU), then these investigations would be prioritised according to:

- Where the legal entity is based (e.g. a non-compliant firm based in Europe may, all else equal, be prioritised over one based in Asia)
- The popularity of the website (i.e. its estimated sales volume)

Ideally the national or state authorities should work together. In Australia for example, the Borders and Customs Agency has a statutory duty to provide data to the Government authorities overseeing the WEEE EPR scheme so as to help ensure that all importers are registered. Given the wide range of related illegality and tax evasion issues, it is important that customs agencies work closely with EPR scheme operators.

In addition, enforcement could be made more efficient if supra-national authorities, in the case of the EU, or national authorities, in the case of the US and Canada, worked together on EPR free-riding issues[66]. Enforcement could be guided by national and state authorities, but coordinated across jurisdictions so as to reduce the overall amount of work required to investigate online web-sellers. For example, it may be that German, Dutch and UK regulators are all simultaneously investigating the same online seller whilst only one needs to, if the findings were shared.

As noted earlier, the German Environment Agency has set up a network to share information on free-riders and the actions that are being taken against them (the European WEEE Enforcement Network). Some experts suggested that The European Environment Agency could be better placed to act in this co-ordinating role at the level of the EU while, for wider geographic coordination, the OECD could potentially be suitably placed.

It is also worth noting that in Germany, under the "Gesetz gegen den unlauteren Wettbewerb – UWG" law, a competitor can issue a "warning" (effectively a cease-and-desist letter) and demand compensation from a non-compliant producer, stop the producer from selling non-registered EEE (injunction), and request disclosure of sales and their recipients. The Federal Environment Agency can also request the payment of a fine equivalent to the profit gained through unfair competition.

Beyond regulatory agencies, there may also be a role for the online platforms in regard to policing the activities of the sellers that they host. While multi-seller platforms are often not legally defined as producers or importers (as they do not take ownership of the good per se), they make profit from the selling of products and handle these products through their fulfilment centres where they operate. Many stakeholders felt that it should be the duty of such platforms to not only inform sellers of their obligations, but also to proactively monitor PRO registrations and remove sellers that are free-riding. Some multi-seller

[66] See OECD (2018), "Consumer protection enforcement in a global digital marketplace", *OECD Digital Economy Papers*, No. 266, OECD Publishing, Paris, http://dx.doi.org/10.1787/f041eead-en. – for a discussion of multi-lateral enforcement cooperation in the context of e-commerce and consumer protection.

platforms already have voluntary programmes to counteract the sale of counterfeit goods on their sites, showing that such proactive action against illegal practices is possible.[67]

Finally, the role of technology should not be underestimated:

- New digital tracking technology could make it possible to implement genuine Individual Producer Responsibility where this is currently not possible (due to economies of scale and inability of tracing products back to producers at end of life, collective producer responsibility systems are currently most frequently being used).
- The use of blockchain technology is rapidly expanding in modern supply chains and could be adopted to facilitate EPR compliance management.[68] Furthermore, the implementation of smart contracts with partially or fully self-executing clauses is another promising technology which could be looked into to determine its applicability to addressing EPR free-riders (see Section 7).

6.3. Awareness raising and website practices

6.3.1. Overview

It seems likely that, aside from the companies deliberately evading EPR fees, import taxes and VAT, much of the free-riding is down to ignorance amongst e-commerce sellers. Taking the EU market as an example, why would a Chinese or US firm necessarily be aware of, or concern itself with, each of the EPR requirements in each of 28 EU Member States? Similarly, would a small web seller in the EU have the resources to ensure that, should any US shoppers use their site, they are meeting their responsibilities in the relevant US states?

Some EU and China based websites will ship EEE to other countries with no fees, import duties, or sales taxes mentioned, let alone EPR fees. Some web-sites have no associated address shown and contact is often only possible with customer services by e-mail via the web-site.

In other cases, some online sellers do make efforts to include the relevant duties, taxes, and other fees in the price of goods to be shipped overseas. However, only one – Pixmania - was found (in a short search of some well-known sites) that specifically mentions WEEE EPR fees (Box 6.3).

[67] Making such obligations a legal requirement, however, would appear to be difficult, given that online platforms are merely third parties in these trades.

[68] OECD (2018), "Consumer product safety in the Internet of Things", *OECD Digital Economy Papers*, No. 267, OECD Publishing, Paris, http://dx.doi.org/10.1787/7c45fa66-en.– highlights the role that blockchain technology and the use of so-called smart contracts could play in enabling traceability and enforcement.

Box 6.3. Pixmania: Funding the recycling process

Pixmania is a France-based e-commerce website with an annual turnover of over €300 million in 2013. Until 2013 it ran bricks-and-mortar retail stores in Europe but now only operates online. Pixmania appears to be one of the few online sales platforms that show the 'visible-fee' in its billing, as is legally required in France. The following text is stated on it's website:

"To cover the cost of collecting, removing, processing, storing and recycling waste electronic and electrical equipment, the price of each product now includes a sum specifically for this purpose. This sum covers the future cost of recycling the product. It is paid directly to an accredited organisation responsible for processing this type of waste. The organisation decides the amount due for each product, and depends on the type of product you're buying. Additional criteria are then used to evaluate the amount of material to be recycled, these can include the weight of the product, the capacity of a fridge or the screen size of a television or monitor. A price breakdown is given for all of the products on our website that are subject to this charge. You'll see three different prices: the price of the product, the WEEE charge and the total price of the product including all taxes."

Pixmania appears to be active in 14 European countries with various web sites including Pixmania.com and national sites. This information seems to be shown on all Pixmania sites even though the WEEE EPR funding arrangements and charges differ in each EU country. A request was made to clarify this information but there has been no response from Pixmania.

Source: Pixmania website.

There is a consensus among stakeholders that proactive awareness raising activities would be a useful complement to regulatory enforcement. EPSC in Canada, for example, noted that EPR free-riding through online sales should be addressed through peer pressure and strict enforcement, but that this should be combined with education of internet sellers.

It is important to note that, given the definition of producer used in EPR regulations in most parts of the world, online marketplaces (which host hundreds if not thousands of sellers) are not considered to be the legal seller or importer, even where they have a fulfilment centre in a country. As such, these firms may not have producer obligations under EPR schemes. Most stakeholders feel, however, that marketplace platforms at the very least have some obligation to proactively make sellers on their platforms aware of EPR regulations in the relevant countries and check their compliance. Increased efforts could be made to effectively educate and monitor compliance of these sellers – marketplace platforms could be pivotal allies in delivering a solution in this regard.

6.3.2. Good practice

Some of the larger EU based PROs, including the European Recycling Platform (EPR), are proactively seeking out web sites in East Asia and in some cases travelling to visit the companies operating them. In addition, Authorised Representatives in Europe appear to be

proactively seeking out free-riders so as to recruit them[69]. By creating a business opportunity, these private companies are willing to take on an awareness raising role outside their own countries so as to attract new business and (in the case of the PROs) to ensure that they offer the best deal for their other members. This therefore helps to reduce the burden on the enforcement side.

The competent authorities from nearly 20 EU countries responsible for the enforcement of the EU Directive on WEEE have formed a network in September 2017 in order to cooperate more closely on the prosecution of non-compliant producers who trade across borders.

There are a variety of good practices with respect to online sellers. As noted earlier, the larger multi-seller platforms have been proactively working to combat counterfeits and most will react to complaints from peer sellers and enforcement agencies where EPR free-riding is taking place. However, in most cases, action in response to free-riding is reactive rather than proactive. There is other relevant good practice in terms of helping to prevent direct private sales into other jurisdictions. Some web sites, particularly in the USA, will not ship directly to countries other than the US and its territories. The leading US EEE seller explicitly assumes that international orders are intended for use in the US[70] (Box 6.4).

Box 6.4. BestBuy.com, international orders

International Orders: We can ship BestBuy.com orders to:

- The 50 United States; U.S. Virgin Islands; Guam; APO/FPO addresses (military)
- During checkout, enter the phone number of the person you're shipping to.
- International orders are intended for use in the U.S., and it is assumed that products will be used in the U.S.
- Best Buy does not ship to known freight forwarders.
- Tax manifestos and sales tax refunds are not available for these orders.

From a consumer perspective, and indeed for a PRO or regulator investigating non-compliance, it is often not clear whether a distance seller is or is not meeting its obligations with respect to EPR. As noted earlier, Ireland requires that any website selling EEE must show the EEE producer (or AR) registration number.

Alongside the EPR registration number it would therefore also be useful to have a symbol that reflects compliance in a particular territory. An example is provided in Box 6.5.[71]

[69] As stated by some stakeholders at an WEEE Forum hosted expert workshop in Brussels on 13 September 2017.

[70] BestBuy (2017), International orders

[71] The use of online labelling is also discussed in OECD (2018), "Improving online disclosures with behavioural insights", *OECD Digital Economy Papers*, No. 269, OECD Publishing, Paris, http://dx.doi.org/10.1787/39026ff4-en.

Box 6.5. SafeShops.be code of conduct

There is a Belgian quality label for websites and several EEE sellers are using it. SafeShops.be is an e-commerce label that recognises websites that meet a set of principles:

- Respect your business terms
- Provide correct information about payment and delivery
- Comply with warranty terms
- Have a clear complaints procedure
- Show respect for your privacy
- Clearly indicate contact information
- Display correct price indications



This type of scheme could potentially be extended to also cover EPR related regulations. SafeShops.be is working with the Flemish regulator and PRO to do just that. This approach would, of course, need to be combined with raising consumer awareness of what they need to look for in a legitimate online seller's website.

Some stakeholders noted that it would be easy to fake the logo and provide a false registration number. However, this assumes that these companies are even aware of the EPR schemes and the related obligations. This seems unlikely (given the discussion on awareness above) for at least the smaller sellers and those in geographically distant jurisdictions. Some sites for importers provide very clear guidance and support (Box 6.6), but it is often notable that there is no mention of EPR fees or the need to register if importing EEE.

Box 6.6. Importer site declaration (Shippo)

"When importing with Shippo, we'll declare your goods to customs and pay the UK Duty and VAT on your behalf to have your consignment released. At this point we'll have the exact UK Duty and VAT figures and will forward them to your freight invoice. You'll then pay the Duty and Import VAT along with the shipping via bank transfer, in one fell swoop before delivery!

Source: Shippo website.

This type of clarity is what would ideally be visible on all websites. In this age of big data, it should even be possible for websites to identify the location of the buyer (through the IP address and if not to use the mailing address), to identify the import duty, VAT and EPR charges payable for that EEE item in that territory (through access to a suitably approved database) and charge the customer accordingly, the fees being passed on to the relevant authorities in the country in question.[72] Alternatively, in order to simplify the regulatory and PRO workload, web-sites could be required to automatically notify the relevant authorities in other countries when an EEE sale is made in that territory. While delivering items via packaging forwarding companies would potentially get around any such requirement, it would be another step towards full compliance.

6.4. Product levies and customs

6.4.1. Overview

A number of stakeholders suggested that it may be possible to simplify the EPR funding arrangements by using an up-front levy (as used in Switzerland and Australia for example) on each item imported into a country, potentially even rolling the EPR fee into Import Duty. In the EU the Single Administrative Document (SAD) is used to declare goods that are moved from one part of the EU to another and must accompany goods throughout the EU.[73]

This would then make it a customs issue from an enforcement point of view. This may be something that could be done just for certain classes of small EEE that are known to be more problematic from a free-rider perspective.

Another suggestion was that packages, as well as web sites, could be labelled with the EPR registration code and a logo so that customs officials could more easily undertake spot checks and potentially impound products that were not sent by a registered producer. One stakeholder also suggested that rather than creating an additional label, WEEE EPR registration in the EU could be an additional requirement under CE marking for EEE products.

Many of the stakeholders interviewed felt that using customs to enforce EPR schemes would be too complex on a number of grounds:

- It would require international agreement
- Products are often inaccurately coded – it would not be obvious that they are EEE unless x-rayed
- Millions of products cross borders every day. Some are containerised which makes inspection difficult (although spot checks are made)
- Customs officials are already overstretched dealing with other issues such as drugs and counterfeit goods

As such, another option may be to link EPR registration directly to VAT registration (see Section 6.5.2)

[72] This may be how the Pixmania site is operating, although that is not clear.

[73] UK Revenue and Customs (2012), How to classify imports and exports using the UK Trade Tariff.

6.4.2. Good practice

A number of EU countries make EPR obligations related to the import of EEE clear (the UK guidance being found here: https://www.gov.uk/guidance/importing-and-exporting-electronic-goods).

The Belgian PRO Recupel notes that companies that are required to register for VAT in Belgium, and that put EEE on the market, are also required to register with Recupel. If a company registers for VAT in the US, this apparently allows state authorities to require companies to comply with other state laws, even if they have no physical legal entity in the state.[74]

In the US, it is also worth noting that the Marketplace Fairness Act (implemented in 2013) grants participating states the authority to collect sales tax at the time of transaction from online or remote sellers. In order to make the collection of sales tax from multiple states more straightforward, states seeking collection authority have two options:

- A state can join the twenty-four states that have already voluntarily adopted the simplification measures of the Streamlined Sales and Use Tax Agreement (SSUTA) by becoming a full member
- States can meet five simplification mandates listed in the bill. States that choose this option must agree to:
  - Notify retailers in advance of any rate changes within the state
  - Designate a single state organization to handle sales tax registrations, filings, and audits
  - Establish a uniform sales tax base for use throughout the state
  - Use destination sourcing to determine sales tax rates for out-of-state purchases (a purchase made by a consumer in California from a retailer in Ohio is taxed at the California rate, and the sales tax collected is remitted to California to fund projects and services there)
  - Provide free software for managing sales tax compliance, and hold retailers harmless for any errors that result from relying on state-provided systems and data

Some US states (including Wyoming and New York) are working on legislation that would require online marketplaces to collect sales taxes on behalf of the suppliers selling on their sites, and to require sellers to report sales. Historically in the US, Amazon (as the largest online seller) has not been required to collect sales taxes generated as a result of the transactions it facilitates. However, from the 1st April, 2017, Amazon has been collecting sales taxes in all 45 states that currently tax their sales.[75]

Third party sellers are often small businesses who claim that they cannot easily track where their goods are sold and who are often unaware of tax legislation. So far, Amazon only collected the amount sellers charge and tacked on a sales tax if a seller asked them to. When a retailer isn't required to collect sales taxes, states ask residents to pay it themselves on their annual tax filing – something that many people will be unaware of.[61]

[74] Personal communication from Garth Hickle, formerly of the Minnesota State environmental authorities.

[75] Personal communication from Garth Hickle, formerly of the Minnesota State environmental authorities.

Declining tax revenue is forcing US states to look more closely at where they can limit losses.[76] If they can be successful in encouraging online marketplaces to collect sales taxes from third parties, it may also be possible to add EPR into the system and help to make buyers and sellers aware of their responsibilities.

6.5. Courier and postal services

6.5.1. Overview

One significant issue to emerge during this study is that online sellers do not often have a legal entity within the country or state in question. In this situation, the importer is effectively absent, the distance seller is hard to identify, and enforcement difficult to pursue.

Distance sellers often have contracts with courier organisations such as FedEx, USP, and DHL. It has therefore been suggested that these organisations could take on aggregate producer responsibilities, as the de-facto importer, where the distance seller is not registered in the territory where the parcel is being delivered. This would almost certainly make the courier companies take the EPR issue into account when negotiating contracts with large online sellers overseas, as part of a wider due diligence process.

As with the reluctance in some EU countries for ARs to take on the obligations and potential liabilities of producers overseas, courier companies would presumably also want to be sure that they are not taking on additional liabilities when bidding for a courier contract with a web-seller overseas, hence providing a strong motivation to ensure that the distance seller is compliant.

It is worth noting that in the case of national postal services, imposing EPR obligations would not be reasonable unless they enter into contractual delivery arrangements with distance sellers.

6.5.2. Good practice

The logistics company DHL is already very involved in EPR systems. DHL has operated WEEE and packaging compliance services in the UK for many years, although these operations were recently sold to the Landbell Group, the main shareholder in another compliance specialist, ERP.[77] It is understood that DHL will continue to provide customers with supply chain and recycling services through its EnviroSolutions arm, while European Recycling Platform (ERP) will carry out data and compliance services for electrical and electronic equipment, packaging and batteries. DHL also works in Australia to provide a 'Co-regulatory Arrangement' with its EnviroSolutions environmental services offering, and works closely with local councils on the national WEEE collection service on behalf of equipment importers and local manufacturers.

In Flanders (Belgium), DHL and Bpost, the Belgium postal service, are taking part in a take back trial run by VIL, a logistics innovation and research centre. On delivery of an item of EEE, customers have the opportunity to give back small WEEE. This is placed in a plastic bag (one for hazardous, one for non-hazardous) and back-hauled to the nearest Distribution Centre where it is placed in pallet boxes and collected by Recupel for WEEE

[76] Ibid.

[77] Lets Recycle (2017), DHL sells WEEE and packaging compliance work to ERP.

treatment. VIL noted that they believe it is a complex and costly process, given that other free disposal routes are available for consumers.

It is worth noting that, given the wide range of commercial activity by DHL in the EPR space, it is not too much of a leap to see couriers taking on additional responsibilities as producers where no importer exists,[78] or where distance sellers do not meet their obligations. Several PROs are being proactive in engaging with distance sellers to raise awareness about EPR schemes and encourage sign up. Vertical integration, between couriers (e.g. DHL) and PROs (e.g. ERP), potentially provides an added incentive to be proactive in reaching out to distance sellers, as there is potential commercial benefit in providing both courier and environmental compliance services bundled together across the EU and beyond. However, there is no evidence that these integrated services actually provide additional quality and transparency, and that they are a guarantee of compliance.

6.6. The consumer

Increased consumer awareness of 'legitimate' EEE web-sellers (perhaps with the help of communications campaigns) could help, however it was generally felt by stakeholders that this would be a weak driver of distance seller behaviour.

[78] An importer in law would need to have ownership of a product. A delivery service would not typically have ownership, however this does not mean that the courier could not be defined as a 'producer' in certain circumstances.

7. Possible action to address free-riding in the context of online sales of EEE

Online selling of Electrical and Electronic Equipment is of growing concern because of its impact on free-riding, both in relation to financing of WEEE recycling and in regard to physical take back. Having explored the issues with a wide variety of stakeholders (mostly in the regulatory and WEEE PRO field), it is clear that there is no 'silver bullet' solution, but that a variety of complimentary measures will instead be required.

Taking into account the wide range of stakeholder views that have been gathered for this report, the following measures have been identified as potential means of action, although many would require further detailed consideration. There are three main categories:

- Awareness raising and simplified transaction tracking making use of existing points of contact and mechanisms where possible
- Enforcement strengthening and co-ordination across jurisdictions and between different types of product regulators
- Stronger and refined regulation

The first group, and potentially some of the second group, can be considered to be 'lower hanging fruit' or, in other words, measures that can be addressed quickly to reduce online free-riding. This could potentially deal with a large proportion of the problem, although it is difficult to say quite how much given the lack of detailed data. Regulatory changes will, of course, take far longer but may be necessary to effectively reach the distance sellers that are deliberately avoiding their obligations and particularly those with no physical presence within a territory.

7.1. Measures to Raise Awareness and Simplify Tracking of Transactions

The consensus is that much of the problem relates to a lack of awareness among sellers,[79] and that a significant improvement can be gained through the various stakeholders working together in the following ways:

- **E-commerce codes of practice** would involve a voluntary standard for websites that includes the showing of Producer Responsibility Organisation registration details, the legal entity address and contact information, and potentially a logo. This could build on the SafeShops.be model and other similar e-commerce quality labels. This would provide a benchmark for all legitimate online sellers (who will be the ones informed of the requirements) so as to provide a simple checking mechanism for enforcement authorities and informed consumers. The OECD could potentially play a role in the development of such a standard.
- **Multi-seller 'marketplace' platforms could undertake efforts to proactively inform sellers** on their sites of their obligations in regard to EPR. They could also remove those firms that do not have an appropriate PRO registration. This could be a requirement under the code of practice noted above. At present, some sites are only reactive; sellers are only removed when the website is notified of non-

[79] In some cases, even those sellers with 'bricks and mortar' facilities within the EU.

compliant listings (e.g. where a seller has not registered with the relevant authority).

- **Encourage Producer Responsibility Organisations** (and Authorised Representatives under the EU WEEE Directive) **to undertake promotional and awareness raising work overseas**, and particularly in East Asia.
- **Link EPR registration with other regulatory measures**. For example, when companies are applying for a Value Added Tax registration for Electrical and Electronic Equipment, they could be made aware of the need to also register for EPR. To take this further it could be a mandatory to become a member of a Producer Responsibility Organisation as a condition of obtaining a VAT registration.[80] Similarly, consider making producers aware of their Extended Producer Responsibility obligations through the documentation and awareness raising activities linked to meeting technical and safety standards (e.g. Conformité Européene markings in the EU and the equivalents elsewhere). An additional but more complex step would be to make EPR registration a condition of obtaining a CE mark for those putting EEE onto the EU market.

It was also suggested that the latest digital transaction tracking technologies can also help to automate EPR processes and payments, helping to diminish the need for awareness raising measures. This is something that would require a collaborative effort across different stakeholder groups:

- **Explore the use of innovative solutions**, such as **blockchain technologies** which are based on general and public distributed ledgers. This technology is rapidly expanding in modern supply chains and could be adopted to facilitate EPR compliance management. EEE could be "linked" with their digital counterpart through unique identifier codes registering any EPR payment. Cross boundary movements between nations could be reflected in the system and payments either transferred from one country to another or refunded to the exporting entity.
- Furthermore, the implementation of **smart contracts** with partially or fully self-executing clauses is another promising technology that could be explored. Respective contractual rights and obligations could be automatically activated by an independent system when a triggering event occurs. In the context of EPR and online sales, the triggering event could be determined as the "order" combined with the "delivery address" which in combination could respectively determine the time when the payment is due and the entity the payment has to be remitted to.

7.2. Measures to Strengthen Enforcement

While awareness raising will help those that are simply unaware of their obligations with respect to EPR, there are also companies that are unwilling to take an interest or to pay the fees involved with registration across many jurisdictions. There are a number of things that could be done to improve enforcement in these scenarios:

- **Require a single electronic register of producers for each jurisdiction** and publish it on the competent authority's website along with a form to report unregistered producers. The trading name of the website should be required for

[80] Recupel in Belgium, and the register in Lithuania, were in 2007 refusing to register companies for EPR that did not have a domestic VAT registration, and the opposite could be done; i.e. no VAT registration without an EPR registration.

registration, as well as the legal entity's name. The aim would be to simplify the checking of registrations for enforcement authorities and to enable checking by legitimate producers.

- Encourage, and **provide simple mechanisms**, to allow Producer Responsibility Organisations, and registered producers and distributors, **to report any suspected free-riders** to the authorities so as to assist enforcement.
- **Co-ordinate enforcement action at the supra-national/national level**, e.g. across the European Union, across the United States of America, across Canada, to make enforcement less daunting for individual territories and more cost-effective overall. In the EU, the European Commission publishes lists of competent bodies on its web pages to facilitate this and the German Environment Agency has set up a network to share information on free-riders and action being taken (The European WEEE Enforcement Network).
- **Develop mechanisms**, or potentially make it mandatory, **for customs, tax and trading standards officials** to work in a joined up fashion with the environmental authorities on product regulation and enforcement.

7.3. Regulatory Measures

Awareness raising, smarter transaction tracking, and enforcement will undoubtedly help the situation, but additional regulations may also be required to tackle evasion of existing EPR regulations and to reach those without a physical entity in the territory in question. The following are areas that could be considered within the context of existing WEEE EPR systems:

7.3.1. Short Term

- **Establish a harmonised framework for registration across a wide range of countries/territories.** At present, several hundreds of diverging national EEE categories exist which add unnecessary layers of complexity and administrative burden. Harmonising the format and product coding used would simplify compliance procedures and hence reduce the administrative burden for producers. The EU Commission is intending to implement a common format for reporting in 2018, which is understood to be aimed primarily at PRO reporting. Extending this reform to producer registration could generate progress in the context of free-riding. However these measures will only implement harmonized rules for reports from compliance schemes to the national registers[81]. Producers will not benefit from this modification, as the myriad of existing reporting categories used to fulfil reporting obligations from producers to Producer Responsibility Organizations (PROs) are likely to persist.
- Explicitly **build into WEEE legislation the ability to prosecute a company for illegal action in another country or territory** to facilitate enforcement. Such provisions already exist in some jurisdictions (as is the case in the UK for example). Within the EU, prosecution of domestic companies not meeting their obligations elsewhere also appears to be technically possible. However, the enforcement agencies that were consulted for this report saw all forms of prosecution as slow and costly.

[81] http://ec.europa.eu/info/law/better-regulation/initiatives/ares-2018-754618_pt.

- **Consider introducing additional enforcement powers**, and enabling private actions, to prevent illegal online selling. For example, this could be done by obtaining a court ruling to close down the websites of non-compliant sellers quickly and cheaply. Such powers appear to already exist in the EU.[82] For example, in Germany, under the "Gesetz gegen den unlauteren Wettbewerb – UWG" law, a competitor can issue a "warning" (effectively a cease-and-desist letter) and demand compensation from a non-compliant producer, stop the producer from selling non-registered EEE (injunction), and request disclosure of sales and their recipients. The German Federal Environment Agency can also request payment of profit gained through unfair competition from such producers.

7.3.2. Longer Term

- Continue to focus on **simplification and harmonisation of Extended Producer Responsibility regulation**, with very explicit obligations for online sellers in particular (not just distance sellers) and clear and simple guidance in plain language.[83] The EU Commission, in its revision of the Waste Framework Directive (2008/98/EC), is proposing minimum requirements for EPR schemes including better definition of roles and responsibilities of actors and improved enforcement and co-ordination between Member States.
- **Require all web sites that sell Electrical and Electronic Equipment under their own name to show the Producer Responsibility Organisations registration details** (or the Authorised Representatives acting on their behalf in the case of EU countries) for themselves, to clearly display a logo to indicate their own EPR compliance and to provide the address and contact information for the legal entity behind the site. This could potentially be combined with a requirement to show import duty and Value Added Tax details related to a purchase. It is appreciated that this would add a significant administrative burden for the platforms and their sellers.[84] However software can potentially be developed to deal with this type of issue efficiently.
- Place a **legal requirement on multi-seller platforms to notify their Electrical and Electronic Equipment sellers that EPR registration is required** and what they need to do, to monitor for compliance and to exclude those sellers that do not conform. Sellers can show that they are registered for WEEE in the country to which product is finally despatched through a WEEE registration number for an appropriate PRO. As with some other measures (such as e-commerce quality labels), this approach will not solve the problem that a distant seller may not report the correct quantities put on the market, even if they are registered.
- As a further step, **multi-seller online platforms that operate a fulfilment house in a country could be defined as the producer** of the products that they list from non-registered companies, even where they are not technically the seller. This would deal with the small company problem; instead of thousands of producers based elsewhere trying to register, the fulfilment houses themselves would register

[82] Although the enforcement agencies that were consulted for this report saw prosecution as slow and costly.

[83] European Commission (2016), The 'Blue Guide' on the implementation of EU product rules 2016.

[84] In the EU, for instance, sellers would be required to display 28 different Authorised Representatives, or most likely 84 if all three classic EPR waste streams are included (i.e. WEEE, batteries, packaging).

just once in each territory. They would also be required to report the tonnage of EEE sold through the fulfilment house to the relevant National WEEE Register, split by category and by producer. This would allow the Register in question to verify that the producers are declaring their EEE correctly. With the desire of customers for next day delivery, it would be hard for operators to move their major stockholding further afield to avoid regulation.

- It is worth noting in this context that, in the original Irish WEEE Regulations (2005), retailers were defined as obligated producers if they sold products from producers that were deemed not to have registered.[85] Moreover, they were not allowed to sell products from entities not registered as producers. This provided a mechanism in which retailers would play an important role in monitoring the registration of producers, and thus would reduce free-rider problems. However, the EU Commission noted that this was not consistent with the WEEE Directive and asked for this obligation on retailers to be removed.
- Some stakeholders suggested that the fastest and most effective way for the EU to tackle the issues identified would be to **review the content of the 'Blue Guide'** in light of the findings of this report. It was suggested that in the current version (2016), the text applying to multi-seller online platforms is unclear. The Blue Guide notes that "*where fulfilment service providers provide services … which go beyond those of parcel service providers, they should be considered as distributors and should fulfil the corresponding legal responsibilities. Taking into account the variety of fulfilment houses and the services they provide, the analysis of the economic model of some operators may conclude that they are importers*."
- The EU Blue Guide notes, however, that "*Following Article 15 of the E-commerce Directive, Member States cannot impose either a general obligation on these providers to monitor the content or a general obligation to actively seek facts or circumstances indicating illegal activity. This means that national authorities cannot establish a general obligation for intermediaries to actively monitor their entire internet traffic and seek elements indicating illegal activities such as unsafe products. The ban on requesting general monitoring, however, does not limit public authorities in establishing specific monitoring requirements, although the scope of such arrangements have to be targeted*."

In relation to reaching the full range of distance sellers and overseas producers, and in particular direct sellers without a physical presence in a territory, the following additional measures could be taken:

- **Consider defining parcel delivery companies (such as couriers and postal services) as 'producers'**, in jurisdictions where they have a delivery contract with a distance seller that is not registered with the relevant Extended Producer Responsibility laws and where there is no importer or (in the context of the suggestions above) a fulfilment centre in the territory to take on the obligation. In these situations, parcel delivery companies would therefore become responsible for meeting obligations including physical take back and fees for recycling. It is worth noting that these delivery companies have the data to report the real quantities and categories of EEE delivered directly to the end user.
- **Consider making Extended Producer Responsibility obligations a condition of Conformité Européene markings in the EU and in equivalents elsewhere**. CE

[85] Personal communication from Dominic Henry at the Irish WEEE producer register.

Marking in the EU is used in relation to other product-based single-market regulations, e.g. EMC, LVD, RoHS etc., but not environmental legislation in general. The CE declaration of a product could show that the manufacturer or the brand (where this is obligatory) is registered in all countries where the product is intended to be marketed. It should be noted that this approach could have limited impact in that there is abuse of CE marking (i.e. the mark does not always confirm compliance with all relevant regulations as intended). As with some other measures (such as e-commerce quality labels), this approach will not solve the problem that a distant seller may not report the correct quantities put on the market, even if they are registered.

- **Investigate the potential for practical and direct Individual Producer Responsibility systems**; to provide a simple and accurate means to charge Extended Producer Responsibility fees back to Original Equipment Manufacturers/brands, hence avoiding the complexity of identifying and engaging distance sellers. New digital and tracer based tracking technology could make it possible to implement individual producer responsibility where this is currently not possible (due to economies of scale and inability of tracing products back to producers at end of life) and collective producer responsibility systems are being used.

Annexes

A.1. Research method

The work commenced with a wide ranging literature search using known sources, and a broader internet search covering the EU, US, Canada and Australia.

1. Subsequent to the literature search, a workshop was held in Bern on March 10th 2017, supported by the European Commission and the Swiss Government. This workshop was attended by the following:

- Peter BÖRKEY - Organisation for Economic Co-operation and Development (OECD);
- Roeland BRACKE - Openbare Vlaamse Afvalstoffenmaatschappij (OVAM), Belgium;
- Marco BULETTI - Federal Office for the Environment (FOEN), Switzerland;
- Roman EPPENBERGER - SENS eRecycling;
- Mark HILTON - Eunomia;
- Michael HÜGI - Federal Office for the Environment (FOEN), Switzerland;
- Dagmar JENNI - Swiss Retail Federation ;
- Pedro NAZARETH - Amb3E - Associação Portuguesa de Gestão de Resíduos; Sylvia RÜTSCHI - Federal Office for the Environment (FOEN), Switzerland; and Chris SHERRINGTON – Eunomia.

Further meetings were held at VIL (logistics research and innovation) in Mechelen and at OVAM in Flanders on March 22nd 2017, both to discuss the situation and good practice in Belgium.

- Attendees at these Belgian meeting were:
- Pascal Leroy, Secretary General, WEEE Forum;
- Roeland Bracke, OVAM;
- Peter Lagey, VIL;
- Maya Schmit, OVAM;
- Martine Vanheers, bebat; and
- Christel Vermeersch, recupel.

Further interviews have been held with, or direct input through comments on the draft report have come from, the following stakeholders:

- The European Commission
- David Scuderi, Amazon EU
- Susanne Baker, Environment and Compliance, TechUK
- eBay, via TechUK
- PROsPA in the EU: DSD, Citeo, ARA, Rekopol, Valpak, Repak and Ponto Verde.
- Nigel Harvey, Recolight (UK)
- Marc Guiraud, Eucolight (EU)
- Graeme Vickery, DEFRA Producer Responsibility Policy
- Sarah Downes, REPIC

- Carol Garrett, Suffolk County Council Trading Standards (UK)
- Muireann Kirby, Electrical Safety First (UK)
- Carol Garrett of Suffolk County Council Trading Standards
- Michael Owens, EPA WEEE Regulation
- Tom Moriarty Dell EMEA Regulatory Compliance Manager Canada
- Cliff Hacking; President/CEO, Electronic Products Recycling Association (EPRA)
- Shelagh Kerr, President/CEO, EPSC (Electronics Product Stewardship) USA
- Garth Hickle; EPR Expert, formerly of the Minnesota State Environment Department

In addition the following have been invited to participate (via the first workshop) but have not responded or were unable to attend in Bern:

- Pixmania
- ERP (John Redmayne); and
- via WRAP (the UK Waste and Resources Action Programme):
  - John Lewis;
  - Vestel;
  - Dixons Carphone;
  - Morphy Richards;
  - Sainsburys;
  - Argos; and
  - Tesco.

A.2. Excerpts from Irish WEEE regulations

A Distance Seller sells EEE by means of distance communication directly to private households or to users other than private households in a Member State, and is established in another Member State or in a third country **Obligations - Distance Sellers**

13. Where a producer or as appropriate, a distributor supplies electrical and electronic equipment by means of distance communication he or she shall—

1 *if established in another Member State appoint an authorised representative in accordance with the provisions of regulation 10,*

2 *register in accordance with the provisions of regulation 11,*

3 *notify the registration body or, as appropriate, a third party acting on its behalf at the time of registration that he or she supplies electrical and electronic equipment by means of distance communication and confirm that all such equipment placed on the market in the State complies with the requirements of these Regulations,*

4 *upon a request from the—*

(a) registration body or, as appropriate, a third party acting on its behalf or,

(b) local authority in the functional area where the registered office or, if not a company, the principal place of business of the producer or their authorised representative is located or,

(c) Agency, undertake to provide it with information that demonstrates, to its satisfaction, that he or she has complied with his or her obligations in accordance with the provisions of Article 12 of the Directive to provide financing for the environmentally sound management of waste electrical and electronic equipment from private households deposited at collection points in the Member State of the European Union where the final user of the equipment resides and is complying with his or her obligations in accordance with the provisions of Article 13 of the Directive to finance the environmentally sound management of waste electrical and electronic equipment from users other than private households.

5 *display the registration number issued to him or her in accordance with regulation 12 on his or her website.*

WEEE Management

8) Without prejudice to sub-regulation (3), where a producer or, as appropriate, a distributor supplies electrical and electronic equipment by means of distance communication he or she shall—

(a) ensure that waste electrical and electronic equipment from private households can be returned to him or her at least free of charge on a one-to-one basis as long as the waste electrical and electronic equipment is of equivalent type or has fulfilled the same function as the supplied equipment other than contaminated waste electrical and electronic equipment that presents a health and safety risk unless such contamination is on account of

the distributor's liability under the Sale of Goods and Supply of Services Act, 1980 (No.16 of 1980);

(b) place a visible and legible notice— (i) on his or her website or other electronic means of communication where— (a) electrical and electronic equipment being distributed is displayed, (b) the retail price of electrical and electronic equipment is quoted or, as appropriate, (c) the ordering and financial transaction confirming purchase of electrical and electronic equipment is undertaken or, as appropriate, (ii) in each of his or her catalogues, brochures or, as appropriate, mail-shots, indicating that he or she will take back waste electrical and electronic equipment from private households at least free of charge on a one-to-one basis as long as the waste electrical and electronic equipment is of equivalent type or has fulfilled the same function as the supplied equipment together with details of any or every place of business in the State from which he or she distributes electrical and electronic equipment or, as appropriate, an address in the State where he or she takes back waste electrical and electronic equipment,

(c) display the registration number issued to him or her by the registration body on his or her website,

(d) notify customers when distributing electrical and electronic equipment for private households by voice telephony services, including telesales and telemarketing, that he or she will take back waste electrical and electronic equipment from private households at least free of charge on a one-to-one basis as long as the waste electrical and electronic equipment is of equivalent type or has fulfilled the same function as the supplied equipment together with details of any or every place of business in the State from which he or she distributes electrical and electronic equipment or, as appropriate, an address in the State where he or she takes back waste electrical and electronic equipment, and

(e) without prejudice to paragraphs (b) and (d), accept any waste electrical and electronic equipment of equivalent type or which has fulfilled the same function as the supplied equipment— (i) provided that he or she has given at least 24 hours' notice of delivery, by collecting it on delivery provided it is available at its place of ordinary use for immediate collection and at the time of collection is not connected to any electrical, gas or water supply, waste water pipe, or permanent structure, or (ii) where such equipment is not available for immediate return,— (a) on account of less than 24 hours' notice having been given for collection, by arranging for and collecting it within 15 days of the date of delivery, provided that the waste electrical and electronic equipment concerned is not connected to any electrical, gas or water supply, waste water pipe, or permanent structure, and the distributor or producer concerned has given at least 24 hours' notice of collection, or by accepting it at— (I) any or every place of business in the State from which he or she distributes electrical and electronic equipment or, as appropriate, (II) an address in the State, when occupied by the producer or authorised representative or, as appropriate, the distributor concerned or by any of his or her servants or agents

(9) Without prejudice to sub-regulations (3)(a) and (8)(c), any distributor shall be prohibited from requiring a customer to sign any document or make any declaration stating that any item of waste electrical and electronic equipment is not available for collection. (10) Where a third party distributes electrical and electronic equipment and or facilitates the take back of waste electrical and electronic equipment on behalf of a distributor, the requirements set out in subregulations (3) and 8(c) remain the obligation of the distributor concerned.

Visible Fee

(12) (a) Without prejudice to sub-regulation (11), any distributor who distributes electrical and electronic equipment supplied by a producer who displays environmental management costs shall be required to ensure that such costs are indicated in writing to each purchaser.

(b) Notwithstanding paragraph (a), environmental management costs shall be indicated by the distributor concerned visibly and legibly in writing.

(c) Notwithstanding paragraph (a), where a producer or, as appropriate, a distributor supplies electrical and electronic equipment by means of distance communication that was placed on the market in the State by a producer who displays an environmental management cost in accordance with the provisions of sub-regulation 10, he or she shall, in addition to complying with the provisions of paragraph (b) indicate environmental management costs visibly and legibly in writing. (i) on his or her website or other electronic means of communication or, as appropriate, (ii) in each of his or her catalogues, brochures or as appropriate, direct mail communications.

(d) Notwithstanding paragraph (a), where, for the purposes of or in connection with the distribution by a person of electrical and electronic equipment, the price of the electrical and electronic equipment is stated orally or negotiated by the person or by a servant or agent of the person or is stated on the electrical and electronic equipment or on any container or wrapper in which the electrical and electronic equipment is packed or on a ticket or label attached to the electrical and electronic equipment or to such container or wrapper or in a catalogue or advertisement or in a notice or other document including a receipt, the price so stated shall be stated as a single amount inclusive of any charge made by the producer for any environmental management cost payable in respect of the electrical and electronic equipment.

(e) Without prejudice to paragraph (d), where a price notice, relating to a specific item of electrical and electronic equipment placed on the market by a producer who displays an environmental management cost in accordance with the provisions of sub-regulation (10), is displayed-(i) in a distributor's premises, he or she shall show the retail price of that specific item of electrical and electronic equipment inclusive of the environmental management cost and shall include the following wording- "Included in this price is a contribution to recycling costs of [amount of environmental management cost]",

(ii) on a website or other electronic means of communication by a producer, or as appropriate a distributor, he or she shall, at each point where the retail price is quoted or, as appropriate, the ordering and financial transaction confirming the purchase of such electrical and electronic equipment is undertaken, show the retail

price of that specific item of electrical and electronic equipment which shall be inclusive of the environmental management cost and shall include the following wording" Included in this price is a contribution to recycling costs of [amount of environmental management cost]",

(iii)in a distributor's catalogues, brochures or, as appropriate, direct mail communications he or she shall include the following wording in letters not less than 2mm high-"Included in these prices is a contribution to recycling costs", or

(iv) in any advertisement, the distributor concerned shall include the following wording in letters not less than 2mm high- "Included in these prices is a contribution to recycling costs".

(f) Notwithstanding paragraph (d), each distributor shall make available at the point of sale to the purchaser concerned an invoice, receipt or docket which shall state "Price of electrical items includes a contribution to recycling costs."

A.3. Excerpts from the UK WEEE regulations

"Producer" means any natural or legal person who, irrespective of the selling technique used, including by means of distance communication in accordance with Directive 97/7/EC(e) of the European Parliament and of the Council of 20 May 1997 on the protection of consumers in respect of distance contracts— (a) is established in a Member State and manufactures EEE under his own name or trademark, or has EEE designed or manufactured and markets it under his own name or trademark within the territory of that Member State; (b) is established in a Member State and resells within the territory of that Member State, under his own name or trademark, equipment produced by other suppliers, a reseller not (a) OJ No. L169, 12.7.1993, p.1. (b) The Directive applies to Norway, Iceland and Lichtenstein by Decision 82/2004 of the European Economic Area Joint Committee of 8th June 2004. OJ No. L349, 25.11.2004, p.39. (c) S.I. 2012/1903 (W.230) to which there are amendments not relevant to these Regulations. (d) S.I. 1991/1220 (N.I. 19) as amended by S.I. 1999/663 and S.I. 2003/430 (N.I.8). (e) OJ No. L144, 4.6.1997, p. 19. 11 being regarded as the "producer" if the brand of the producer appears on the equipment, as provided for in sub-paragraph (a); (c) is established in a Member State and places on the market of that Member State, on a professional basis, EEE from a third country or from another Member State; or (d) sells EEE by means of distance communication directly to private households or to users other than private households in a Member State, and is established in another Member State or in a third country.

Obligation to join a scheme 14.—(1) A producer who is established in the United Kingdom will be a member of a scheme in respect of any compliance period or part of a compliance period, during which he puts EEE on to the market and the compliance period following the last compliance period during which he puts EEE on to the market in the United Kingdom unless paragraph (11) applies. (2) A producer who is established in a Member State other than the United Kingdom and who either— (a) places EEE onto the market in the United Kingdom; or (b) sells EEE by means of distance communication directly to consumers in the United kingdom will either— (i) appoint an authorised representative in the United Kingdom to fulfil

their producer obligations under these Regulations on their behalf, or (ii) comply with the requirements of paragraph (1).

Declaration of EEE producer registration number 21. A producer or where one has been appointed, an authorised representative, will declare either— 23 (a) his EEE producer registration number; or (b) the producer registration number of the producer that he has been appointed to represent; to any distributor to whom he intends to sell, sells, or otherwise supplies EEE.