

# **Europe as a Recycling Society**

## **Recycling policies for selected waste streams in EEA member countries**

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**Context**

The Topic Centre has prepared this working paper for the European Environment Agency (EEA) under its 2009 work programme as a contribution to the EEA's work on policy analysis and assessment.

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# Summary

This short paper intends to provide the summary of information on recycling implementation policies used for specific waste streams in the EEA member countries. It is part of the work on EU as a Recycling Society, which the European Topic Centre for Sustainable Consumption and Production has done for the European Environment Agency (EEA). It serves as a background for the “Gross classification of recycling policies in relation to the actual recycling achieved in the EEA member countries”, which is published as a separate working paper.

The waste streams include: packaging and packaging waste, batteries and accumulators, waste electrical and electronic equipment (WEEE), end-of-life vehicles (ELV), construction and demolition waste (C & D waste), biodegradable municipal waste (BMW), and municipal solid waste (MSW). 36 policy instruments addressing these waste streams are identified.

An overall observation from the review of recycling policy instruments for the seven waste streams in the EEA countries can be summarised as follows.

- Relatively standardised measures are found to address the recycling of three waste streams originated from specific products (packaging, WEEE and ELV). With the exception of a few countries in the area of packaging, the overall approach is based on producer responsibility, with mandatory collection and/or reuse/recycling targets. The exception in this regard is batteries and accumulators – until the 2006 Directive came into force, systematic approaches to enhance separate collection and recycling of spent batteries and accumulators had been developed in only a handful of countries. This is somewhat surprising, as the problems of these waste streams have been recognised for decades and an EU directive governing batteries and accumulators has existed since 1991. Meanwhile, the 1991 Directive prohibited the use of specific heavy metals but did not specify collection and recycling targets. Lack of quantitative targets in the Directive seems to have influenced the (non-) introduction of quantitative targets at the national level.
- Eco-design requirements related to reuse/recycling are, in a sense, not traditional waste/recycling instrument. Inclusion of such instruments in waste-oriented directives clearly indicates the recognition of linkage between the upstream and the downstream of products, and of the need to take preventative measures.
- Despite the non-existence of separate Directives for BMW and C&D waste, clear source separation/landfill diversion/recycling targets are found in other Directives (e.g. Landfill Directive, new Waste Framework Directive). This may help Member States to set specific collection and/or recycling targets for these waste streams.
- Concerning measures to reduce the use of hazardous substances – thus enhance recycling and environmentally sound treatment – the prevailing measure is administrative (i.e. ban). Few fiscal measures have been identified.
- Measures to directly enhance the use of recycled materials are also limited. Hardly any information is available on the use of fiscal measures (e.g. taxes on virgin materials), and with the exception of those found in some eco-label standards, the use of minimum recycled materials content standards is limited to one case for C & D waste. However, the measures to enhance the quality of recycled materials, as found in the case of BMW, seem to be increasing.
- Overall, it is difficult to find information on policy measures in a standardised format. The terminologies used often differ from one source to the other. It appears that in some cases different terms are used to express the same thing, while in other cases they indeed mean different things (e.g. the term levy, charges and taxes).

Standardisation of these terms could be useful in enhancing the comparability of measures taken in EEA member countries.

# 1. Introduction

The objective of this paper is to provide the summary of information on recycling implementation policies used for specific waste streams in the EEA member countries. It is part of the work on EU as a Recycling Society, which the European Topic Centre for Sustainable Consumption and Production undertook for the European Environment Agency (EEA). It serves as a background for the “Gross classification of recycling policies in relation to the actual recycling achieved in the EEA member countries”, which is published as a separate working paper.<sup>1</sup>

In accordance with the scope of the aforementioned work, policy instruments used in the EEA Member countries for seven selected waste streams are researched. The seven waste streams are: packaging and packaging waste, batteries and accumulators, waste electrical and electronic equipment (WEEE), end-of-life vehicles (ELV), construction and demolition waste (C & D waste), biodegradable municipal waste (BMW), and municipal solid waste (MSW). In addition, information on waste streams related to these seven waste streams – such as paper, lamps and tyres – are noted.

Originally, 25 policy instruments were sought after for the respective waste streams. These instruments, categorized under the three typologies – administrative, economic and informative – are summarized in Table 1-1. A number of these instruments can be introduced with different level of coerciveness, from mandatory requirements to the addressee to voluntary initiatives by the industry.

*Table 1-1: Policy instruments originally sought after to address selected waste streams in EEA countries*

Typologies of instruments	Instruments
Administrative	Landfill bans, incineration bans, material restrictions, eco-design requirements related to reuse/recycling, minimum recycled material content standards, source separation/collection requirements, waste prevention requirements, waste prevention targets, collection targets, landfill/incineration diversion targets, reuse targets, recycling targets, recovery targets
Administrative/economic	Producer take back requirements
Economic	Deposit-refund systems, taxes on virgin materials, taxes on hazardous substances, landfill taxes/charges, incineration taxes/charges, waste disposal taxes/fees/charges, recycling fees/charges, product taxes/charges, tradable recycling credits
Informative	Information provision requirements, eco-labels

Source: based on Tojo (2004) and Tojo, Neubauer and Bräuer. (2008).

The selection of the instruments is based upon previous work of the author on the review of instruments addressing products and waste (see, for instance, Tojo et al. 2008). Instrument selection focuses is on those that are particularly relevant for recycling within the waste hierarchy. Moreover, four of the seven waste streams selected for the study – packaging and packaging waste, WEEE, ELV and batteries and accumulators – have been subject to government interventions based on the concept of (extended) producer

<sup>1</sup> ETC/SCP (2010). Forthcoming publication.

responsibility<sup>2</sup> in a number of the EEA member countries. (see, for instance, Tojo, Lindhqvist and Davis, 2003). Indeed, this concept is one of the underlying principles for three of the EU Directives relevant to this study.<sup>3</sup> Thus, instruments are also drawn from those found in the producer responsibility programs and addressing mainly recycling (Tojo 2004) – many of which overlap with recycling-oriented instruments. Through the literature search described below, other instruments addressing the respective waste streams are identified and added. This led to a review of 38 policy instruments in total. A short description of the respective policy instruments discussed in this paper is found in Appendix I.

This report is a desktop research based on literature review. First, the 2006 edition of the EEA country fact sheets on waste policies for all the 25 EU member states, together with the 2009 edition of the fact sheets of 16 EEA member countries available at the time of research, were reviewed.<sup>4</sup> Policy instruments for the respective waste streams mentioned in the fact sheets were noted. Once the fact sheet review was completed, the information found was supplemented with additional sources. The sources used are primarily of secondary nature, though primary materials such as national legislation are consulted when feasible.

In the following sections, policy instruments used in the EEA member countries for the seven selected waste streams are summarized. Although various efforts have been made to capture the instruments used in the EEA member countries as comprehensive as possible, it was not possible to check whether an instrument is used or not in all countries. Thus the summaries present a “positive” list: countries are listed only when the use of respective instruments in the country in questions can be reliably verified.

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<sup>2</sup> In this document, the terms extended producer responsibility (EPR) and producer responsibility refer to the same concept and are used interchangeably. The term “producer take-back requirements” in this document encompasses policy measures where producers are physically and/or financially responsible for all or part of the end-of-life management of products. However, this does not include achievement of numerical targets.

<sup>3</sup> These Directives are: Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of life vehicles, Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment, Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE), and Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC.

<sup>4</sup> The countries included in the 2009 fact sheets are: Austria, Belgium, Bulgaria, Czech Republic, Estonia, Finland, Germany, Ireland, Italy, Latvia, Netherlands, Romania, Slovakia, Slovenia, Sweden and Switzerland.

## 2. Recycling policy instruments for packaging and packaging waste

Table 2-1 summarises the recycling policy instruments for packaging and packaging waste used in the EEA member countries.

*Table 2-1: Recycling policy instruments for packaging and packaging waste used in EEA member countries*

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill bans	Mandatory	National/ Regional	AT, BE, CZ (paper), DK (combustible waste), IE, IT	6
Incineration bans	Mandatory	-	-	0
Material restrictions	Mandatory	National	AT, BE, BG, CZ, DE, EE, FI, IE, IT, NL, RO, SE, SI, SK	14
Eco design requirements	Mandatory	National/ Regional	AT, BE, BG, CZ, DE, EE, FI (extensive), IE, IT, NL, RO, SE, SI, SK,	14
Minimum recycled materials content standards			Some are found in the eco-label standards in Germany	-
Source separation requirements	Mandatory	National/ Regional/ Municipal	All the EU Member States plus NO for packaging, AT (newsprint), DK (paper: kerbside collection system mandated for municipalities when collection target is not met), SI (paper)	28
Waste prevention requirements	Mandatory	National	FI (packers)	1
Waste prevention targets	Mandatory	Regional	BE (paper, superfluous packaging)	1
Collection targets	Mandatory	National/ Regional	BE (paper, cardboard, packaging), EE , FI (paper), SE (paper)	4
	Mandatory	Municipal	DK (paper), IT(paper & cardboard, glass, plastics, metals)	1
	Voluntary	National	SE(office paper)	1
Landfill/ incineration diversion targets	Mandatory	National	NL	1
Reuse targets	Mandatory	National	AT (refillable beverage containers), BG, DE, FI (general for packaging, refillables under DRS)	4
Recycling targets* (additional items/ items not covered but included in the EU Directive in parenthesis)	Mandatory	National/ Regional	BE (paper, beverage cartons, not wood), BG, CY, CZ (not wood), EE (no material specific targets), EL, ES, HU, IE, LT, LU (beverage cartons, not wood), LV (not wood and paper), MT, PL (paper), PT, RO (no material specific targets)SK (not wood), SI, UK	19



Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Recycling targets higher than set at the EU level* (additional items in parentheses)	Mandatory	National / Regional	AT (composites, not wood) DE (composite, but not wood), FI (glass, metal, plastic, fibre, refillable and non-refillable beverage containers under DRS, paper) FR (paper, but not wood), IT, NL (paper), NO (expanded polystyrene, corrugated boards, beverage cartons, but not glass, not wood), SE (paper, separate targets for metal cans/PET bottles)	8
Recovery targets*	Mandatory	National	BE, BG, CY, CZ, DE, EE, ES, FI, HU, IE, LT, LU, MT, NO, PL, PT, RO, SE (paper, plastics other than PET bottles), SI, SK (packaging, plastics, multi-layered combined materials), TR	21
Producer's take-back requirements** (additional items in parentheses)	Mandatory	National/ Regional	AT, BE (paper), BG, CY, CZ, DE, EE, EL, ES, FI (paper), FR, HU (paper), IE, IT, LT, LU, LV, MT, NL, NO, PL, PT, RO, SE (paper), SI, SK, UK	27
Deposit-refund systems	Mandatory	National	AT (refillable beverage containers), CH (refillable beverage containers), CZ (glass bottles), DE (one-way containers not meeting refillable targets), DK (refillable and one-way bottles), EE (one-way and returnable packaging), FI (refillable & one-way bottles), LT (glass bottles), RO (reusable packaging), SE (aluminium and metal cans, PET bottles)	10
	Voluntary	National	SE (glass bottles)	1
Taxes on virgin materials	Mandatory		-	0
Taxes on hazardous substances	Mandatory		-	0
Landfill taxes	Mandatory	National/ regional	AT, BE, CH, CZ, DK, EE, FI, FR, IE, IT, LV, NL, PL, SE, UK	15
Incineration taxes	Mandatory	National/ regional	BE (differentiated with or without energy recovery), DK, , NO, SE**	4
Waste disposal taxes/charges	Mandatory	National/ regional	BE (residual), SI (waste generation)	2
Recycling fees/charges	-	National	All the countries with EPR system has some type of fee system for economic entities	20
Product taxes/charges	Mandatory	National	BE (one-way containers), DK (weight-based for all, volume based for beverage containers, carry bags, disposable tableware), EE (one-way containers), FI (non-refillable beverage containers not part of DRS), IE (plastic bags), IT (plastic bags), PL (disposable containers)	7

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Tax exemption /reduction	Mandatory	National/Regional, Local	BE (exemption for source separated waste, reduction for waste to be incinerated), FR (local government receives tax reduction when source separation system is in place), FI (those belonging to DRS), HU (those part of an EPR system), LV (packaging and disposal tableware, those part of an EPR system), CZ (products made of recycled paper)	5
Packaging excise	Mandatory	National	BR, EE, LT, PL (in all cases, fees/charges need to be paid when reuse/recycling rate set in legislation is not met)	4
Tradable recycling credits	Mandatory	National	UK (packaging waste recovery note)	1
Eco labels	Voluntary	National	DE (packaging, paper, plastics, use of waste paper, etc.), SK (biodegradable plastic packaging)	2

\*Targets include not only those found in statutory documents but also those set between the industry association and government in their negotiate agreements.\*\* Include systems in which where those not being a part of an EPR system would need to pay taxes/fees.

\*\* In Sweden, the abolishment of incineration tax was proposed to the Parliament in 2009 (Regeringen 2009).

Sources: Country fact sheets on waste policies 2006 edition (25 countries), country fact sheets on waste policy 2009 edition (16 countries), EEA (2005a), EEA (2005b), EEA (2006), Sahlin, Ekvall, Bisailon c. and Sundberg (2007), Speck Andersen, Skou, Nielsen, Ryelund, and Smith, Ca. (2006), Sweden: Lag (1999:673), Tojo et al, (2003), Tojo (2008b), VROM (2001g), VROM (2001h)

Among the administrative instruments, material restrictions and eco-design requirements are found in all but two countries whose 2009 edition of the fact sheets are available. Thus it is likely that most of the remaining countries will have the same instrument. This is deemed to be due to the mandate found in the EU Packaging Directive 2004/12/EC. The same can be said about the recycling and recovery targets found in for many of the countries reviewed.

Recycling targets are found in virtually all the EU Member States. This is not surprising due to the mandate found in the Directive 2004/12/EC. In some countries, the targets set are – at least for some materials – higher than that set in the Directive. Moreover, in addition to packaging materials, a number of countries have included paper as a waste type for recycling. This is partly due to the need to decrease the biodegradable waste going to landfill. In addition, for countries such as Sweden and Finland, it is most likely to do with the existence of large pulp and paper industry in the country.

Although the EU Directive 2004/12/EC itself does not mandate EU Member States to introduce producer responsibility, the vast majority of the countries set take-back obligation and achievement of reuse/recycling/recovery targets on business actors. In two countries, packaging producers/fillers are exempt from taxes/fees when being part of the producer responsibility organisation. While the details differ, in the case of packaging, the

responsible parties often include both the producers of the packaging materials as well as the fillers and retailers. As alluded in PRO Europe s.p.r.l (2006), the level of involvement of local government in, among others, collection activities differ significantly among the countries.

As a source separation measure, deposit-refund systems still prevail, especially for beverage containers/bottles. The containers covered by deposit-refund systems are often treated separately from the rest of the packaging waste. For instance, in addition to the targets set for other packaging made of similar materials (e.g. metals, plastics), specific reuse/recycling/recovery targets are set (e.g. Austria, Sweden). Containers subject to deposit-refund systems are exempt from taxation (e.g. Finland).

In addition to the 25 instruments originally included in the review, two economic instruments – tax exemption/reduction and packaging excise – are identified. These two instruments support/encourage the implementation of other instruments, such as EPR program, deposit-refund systems and the achievement of reuse/recycling targets. An interesting case is tax exemption in the case of products made of recycled paper found in Czech Republic. Although minimum recycled materials content standards are not identified among legislative measures, they are, together with the inclusion in the eco-labelling criteria, an interesting way to encourage the creation and growth of a market for recyclables and contribute to resource efficiency.

Instead of mandating the use of recycled materials, some governments take a somewhat softer approach. For example, in Finland, public authority should use as much recycled materials as possible (Section 4 3 of the Waste Act). Under the Danish public procurement policy, municipalities are required to use recycled paper. There has been a handbook/guideline published every half a year or so to promote the use of recycled materials (Tojo 2006).

Product taxes/fees/charges are increasingly used mainly for waste prevention purpose. Incineration bans, taxes on raw materials and taxes on hazardous substances were not among the 25 instruments identified.

#### Suggestion for classification and further investigation

- Countries with/without the recycling targets higher than those set in the Directive 2004/12/EC and the implication for the collection/recycling rate achievement.
- Countries with/without material targets not limited to packaging (e.g. paper) and the implication for the collection/recycling rate achievement.
- Countries with or without producer responsibility (and detailed allocation of responsibility, especially involvement of municipalities) and the implication for the collection/recycling rate achievement.
- Countries with or without deposit refund systems and the result for collection/recycling rate achievement.
- Countries with or without product taxes/fees/charges and its implication for waste prevention achievement.

### 3. Recycling policy instruments for waste electrical and electronic equipment (WEEE)

Table 3-1 summarises the recycling policy instruments for waste electrical and electronic equipment used in the EEA member countries.

*Table 3-1: Recycling policy instruments for waste electrical and electronic equipment used in the EEA member countries*

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill bans	Mandatory	National /Regional	NL, BE (certain EEE), IT (those including ozone depleting substances)	3
Incineration bans	Mandatory	National	NL (those separately collected)	1
Material restrictions	Mandatory	National	AT, BE, BG, CZ, DE, EE, FI, IE, IT, NL, RO, SK, SI, SE	14
Eco design requirements	Mandatory	National /Regional	AT, BE, BG, CZ, DE, EE, FI (extensive), IE, IT, NL, RO, SE, SI, SK	14
Minimum recycled materials content standards			-	0
Source separation/collection requirements	Mandatory	National	All the EU Member States plus CH, NO	29
Sorting requirements for reusable products	Mandatory	Regional	BE (WEEE collected: between reusable and recyclable), DE (check possibility of reuse before recycling)	2
Reuse requirements	Mandatory	National	AT (producers)	1
Waste prevention targets			-	0
Collection targets	Mandatory	National	All the EU Member States	27
Landfill diversion targets			-	0
Reuse targets	Mandatory	National/Regional	BE, BG, DE, RO	4
Recycling targets	Mandatory	National	All the EU Member States plus NO	28
Recovery targets	Mandatory	National	All the EU Member States plus NO	28
Producer's take-back requirements	Mandatory	National /Regional (items in addition to those covered under WEEE in parentheses)	All the EU Member States plus NO, CH, BE (lamps), SE (luminaries in households and filament bulbs)	29
Deposit-refund systems			-	0

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Taxes on virgin materials			-	0
Taxes on hazardous substances			-	0
Landfill taxes		National/Regional	AT ,BE, CH, CZ, DK, EE, FI, FR, IE, IT, LV, NL, PL, SE, UK	15
Incineration taxes		National/Regional	BE, DK, , NO, SE*	4
Waste disposal taxes/fees	Mandatory	National	SI (waste generation)	1
Recycling fees		National	All the countries with producer responsibility have some kind of fee systems for responsible economic entities.	29
Product charges/fees/taxes	Mandatory	National	HU (cooling equipment, refrigerants), LT (mercury light bulbs, introduction of tax should be considered when producers do not fulfil their obligations), LV (mercury bulbs)	3
Tax reduction /exemption	Mandatory	Regional	BE (exemption, for source separated waste)	1
Tradable recycling credits			-	0
Information provision: marking requirements*	Mandatory	National	All the EU Member States	27
Information provision: producer identification requirements	Mandatory	National/EU	AT (in the case of individual systems), BE, BG, CY, CZ, DE, DK, EL, ES, FI, FR, HU, LT, LU, LV, MT, NL, PT, SE, SK, UK	21

\*In Sweden, the abolishment of incineration tax was proposed to the Parliament in 2009 (Regeringen 2009) and it was decided that it will be abolished on 1 October 2010.

Sources: Bulgaria: Decree No. 82, Country fact sheets on waste policies 2006 edition (25 countries), country fact sheets on waste policy 2009 edition (16 countries), EEA (2006), Norway: Waste Regulations Chapter 1, Romania: Government Decision no. 448, Sahlin et al. (2007), Sander et al. (2007), Speck et al. (2006), Sweden: Lag (1999:673), Tojo (2004), van Rossem (2008), VROM (2001d).

\* Marking requirement here means the obligation given to producers to put a symbol indicating the prohibition of discarding WEEE in the mixed waste bin on their products.

In the European Union, two Directives address environmental impacts related to end-of-life phase of electrical and electronic equipment: Directive 2002/96/EC on waste electrical and electronic equipment (WEEE Directive) and Directive 2002/95/EC on the restriction of the use of certain hazardous substances (RoHS Directive). While a few countries had national legislation in place prior to the WEEE Directive (NO, CH, NL, SE and DK), or had pending legislation in place (AT, DE), the majority of the countries started to introduce national legislation as was mandated by the EU.

As mentioned earlier, the WEEE Directive is based on the principle of producer responsibility, and it contains a number of instruments typically found in an EPR program, such as producers' take back mandate, source separation/collection requirements, collection/recycling/recovery targets, information provision requirements

and the like. As the EU Member States are required to transpose the content of the Directive in their national laws, these mandates are found in all the Member States. The exception is the producer identification requirements. Due to the potential conflict with internal market issues, a few Member States have not transposed the producer identification requirements in their national law.

Some countries that introduced the producer responsibility programs for WEEE earlier than the WEEE Directive (e.g. Switzerland, Norway, Sweden) originally did not have targets for collection/recycling/recovery. Although Norway still does not have the collection targets, the collection rate continued to grow and was more than 30 kg per person per year in 2007 (Norwegian Pollution Control Authority, 2008), which is far more than the target set in the WEEE Directive (4kg per person per year).<sup>5</sup> It would be interesting to explore the reasons behind the steady increase.

Similarly to the case of packaging and packaging waste, material restrictions and eco-design requirements are found in all the countries whose 2009 edition of the fact sheets are available. This, together with the mandate found in the EU RoHS Directive and WEEE Directive, indicates that the remaining EU Member States would have the same instrument.

Despite the similarity in the type of instruments available to address WEEE among the EU Member States, the results achieved so far in terms of collection and recycling varies significantly among the EU Member States (ETC/SCP, 2010;ETC/SCP, 2010a; Huisman et al. 2007). Moreover, deeper research on the transposition text and actual implementation mechanisms indicate that the way the EU Member States transpose and implement the instruments such as producer take-back mandate and collection varies significantly (see, for instance, Tojo 2004, Sander et al. 2007, van Rossem 2008). For instance, similarly to the packaging waste, actors **who bear financial and/or** physical responsibility for collection from households among the Member States **vary significantly** (Sander et al., 2007). Table 3-2 indicates the allocation of responsibility for collection of WEEE from private households based on the assessment of the national legal text in the 27 EU Member States in 2007.

Another main difference appears in the manners in which producers fulfil their responsibility financially and physically. According to Article 8.2 of the WEEE Directive, producers assume individual financial responsibility for the end-of-life management of so-called new WEEE (i.e. waste arising from EEE put on the market after 13 August 2005). Meanwhile, the same article leaves producers several alternatives to fulfil this obligation. Moreover, for the so-called historical WEEE (i.e. waste arising from EEE put on the market before 13 August 2005), producers existing in the market share the cost for the end-of-life management. The somewhat ambiguous formulation of these articles, as well as different understanding of what individual and collective responsibility could mean, lead to various transpositions of these articles in the EU Member States. This is also reflected in the variety of ways producers organize themselves to fulfil their responsibilities: while there is no competing scheme for the respective product groups covered in the WEEE Directive in 9 EU Member States, Switzerland and Norway, two or more schemes cover the respective product groups in 16 EU Member States (Tojo 2004, Sander et al. 2007, van Rossem 2008).

These concrete manners of implementing the producer responsibility schemes – which actors fulfil which responsibility, and how do they fulfil their responsibility – would most likely have implications for the level of collection from private households. This may

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<sup>5</sup> The appropriateness of setting collection targets in absolute term has been one of the discussion points in the revision process of the WEEE Directive, and the proposal of the revision suggested relative targets (COM (2008) 810/4).

lead to the relatively low collection rate of 24 % by weight on the average in 18 European countries in 2006 (calculated based on Eurostat 2009).

*Table 3-2: Allocation of Responsibility for Collection of WEEE from private households in National Legal Text: EU 27*

<b>Member States</b>	<b>Physical Responsibility</b>	<b>Financial Responsibility</b>
Austria	D/M/P	D/P
Belgium (Brussels)	D/M	D
Bulgaria	P	P
Cyprus	P	P
Czech R.	D/P	D/P
Denmark	M	M
Estonia	D/P	D/P
Finland	D <sup>6</sup> /P	P
France	D/M/P	D/P
Germany	M	M
Greece	P	P
Hungary	P	P
Ireland	D/M	D//P
Italy	D/M	D/M
Latvia	P	P
Lithuania	D/M/P	P
Luxembourg	D/M	D/M
Malta	D/P	D/P
Netherlands	D/M	D/M
Poland	D	D
Portugal	D/M/P	D/P
Romania	M	M
Slovakia	D/P	D/P
Slovenia	D/M	D/M
Spain	D/M	P
Sweden	P	P
UK	D/P	D/P

D = Distributor, M = Municipality, P = Producer (definition varies between national and European approach)

Source (Sander et al., 2007).

In addition to the recycling/recovery targets, some countries introduce measures to enhance reuse, such as reuse targets (Belgium, Bulgaria, Germany, Romania), mandate of component reuse put on producers (Austria) and mandate of separating between reusable and non-reusable EEE (Belgium, Germany). The implication of such measures in enhancing product/component reuse as well as practical means of measuring the reuse targets remain to be seen. Component reuse requirements and mandate of separating between reusable and non-reusable products are also instruments identified under WEEE in addition to the original 22 instruments.

#### Suggestion for classification and further investigation

- Allocation of responsibility for collection/mechanism for collection from households and its implication to the collection rate.
- The concrete manner of implementing producer responsibility and its implication to collection rate.

<sup>6</sup> In the Waste Act Section 18h(2) it is stated that sellers of EEE shall accept WEEE from private households if replaced by purchasing a similar product, or shall direct the purchaser to another reception point.

- Countries with/without national legislation prior to the introduction of the WEEE Directive.

After certain implementation period, it could be worthwhile looking into the countries that introduce measures related to reuse to investigate their concrete implementation as well as its implication to upstream changes.



## 4. Recycling policy instruments for end-of-life vehicles

Table 4-1 summarises the recycling policy instruments for end-of-life vehicles (ELV) used in the EEA member countries.

*Table 4-1: Recycling policy instruments for end-of-life vehicles used in the EEA member countries*

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill bans	Mandatory	National/ Regional	AT (tyres), BE (tyres & ELV) CZ (tyres), DK (tyres), FI (tyres), FR (tyres), DE (tyres), HU (tyres), IT (tyres), NL (tyres & ELV)	10
Incineration bans			-	0
Material restrictions	Mandatory	National	All the EU Member States	27
Eco design requirements	Mandatory	National	AT (via verification), BG, CZ, FI (in general Waste Act), HU, IE, LT, PT, RO, SE, SI, SK	12
	Voluntary	National	BE, DE, ES, FR (via mandatory information), IT, LU, LV, MT, NL, PL	10
Increased use of recycled materials	Mandatory	National	AT (via verification), BR, CZ, DE, FI (in general Waste Act), FR (via mandatory information to the public), IE, LT, PT, RO, SI, SK	12
	Unclear	National	BE, DE, FR (via mandatory information provision), IT, LU, LV, MT, NL, PL, SE (via mandatory information provision), UK (use of economic driver)	11
Source separation/ collection requirements*	Mandatory	National/ Regional	AT, BE (also tyres), CY, CZ, DE, DK, EE, EL, ES, FI, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, SI, SE, UK	23
Requirements related to geographical coverage of collection points	Mandatory	National	BE, DK, HU, IE, LT, PT, SI,	7
Reuse requirements	Mandatory	National/ Regional	AT (component, producers), BE (components, producers), DE (components)	3
Waste prevention targets	Mandatory	Regional	BE (tyres)	1
Landfill diversion targets			-	0
Collection targets	Mandatory	National/ Regional	BE (tyres) FI (tyres)	2

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Reuse targets**	Mandatory	National	AT, BE, BG, CY, CZ (2015 target uncertain), DE, DK, EE, EL, ES, FI, FR, HU, IE, IT, LT, LU, LV, MT, NL, PL, PT, RO, SE, SI, SK, UK	26
Recycling targets**	Mandatory	National/Regional	All the EU member States. BE, EL, HU and SK has targets also for tyres, 2015 targets of CZ uncertain	27
Recovery targets**	Mandatory	National/Regional	All the EU member States. BE, EL, HU, LV, PL and SK has targets also for tyres, 2015 targets of CZ uncertain	27
Recovery targets	Voluntary agreements	National	AT (tyres, as source of energy),	1
Producer's take-back requirements	Mandatory	National	All the EU member States, BE, CZ, DK, FI, IE, NL and SE mandate producers and/or retailers take back of tyres as well.	27
Deposit-refund systems	Mandatory	National	DK, SE, SK	3
Taxes on virgin materials			-	0
Taxes on hazardous substances			-	0
Landfill taxes	Mandatory	National/Regional	AT, BE, CH, CZ, DK, EE, FI, FR, IE, IT, LV, NL, PL, SE, UK	15
Incineration taxes	Mandatory	National/Regional	BE, DK, NO	3
Waste disposal fees	Mandatory	National	SI (on waste generation, tyres and ELV)	1
Recycling fees	Mandatory	National	FI (tyres), NL (ELV), SE (tyres), SK (recycling fund for tyres and ELV),	4
Product fees/charges/taxes	Mandatory	National	DK (tyres, ELV), HU (tyres, ELV), IT (tyres), LT (tyres), LV (ELV charges, by manufacturers, exemption when requirements are met, tyres)	5
Taxes reduction/Exemption			-	0
Excise	Mandatory	National	LT (introduction of taxes will be considered when producers and importers do not fulfil their obligation)	1
Subsidies for recycling		National	DK (tyres, for reuse and recycling), FI (ELV, for cars),	2
Tradable recycling credits			-	0
Information provision to dismantlers	Mandatory	National	All the EU Member States	27
Information provision to the users	Mandatory	National	AT, BE, BG, CY, CZ, DE, DK, EE, EL, ES, FI, FR, HU, IE, IT, LT, LU, MT, NL, PL, PT, RO, SE, SI, SK, UK	26
Eco labels	Voluntary	National	SK (tyres)	1

\*include those based on the agreements between the government and the economic actors

\*\* 12 countries (CZ, EL, ES, HU, IE, IT, LV, MT, PL, PT, SK and UK) set lower reuse, recycling and

recovery targets for cars produced before 1 January 1980 in accordance with the second paragraph of Article 7 (2) (a) of the ELV Directive.

Sources: COM (2007) 618. Final., Country fact sheets on waste policies 2006 edition (25 countries), country fact sheets on waste policy 2009 edition (16 countries), EEA (2006), Finland: Waste Act (1072/1993), Speck et al. (2006), Sweden: Lag (1999:673), Tojo (2004), VROM (2001b).

Similarly to the WEEE Directive, the Directive 2000/53/EC on end-of-life vehicles (ELV Directive) is based on the principle of producer responsibility, and it contains a number of instruments typically found in an EPR program, such as restriction of the use of certain hazardous substances, recycling/recovery targets, information provision requirements and the like. As the EU Member States are required to transpose the content of the Directive in their national laws, these mandates are found in all the Member States. The vast majority of the EU Member States also require producers or other economic actors to take back end-of-life vehicles. The national law of most of the EU Member States also include provisions on eco-design for reuse and recycling and the increased use of recycling materials, although the level of coerciveness of these provisions differ and sometimes are uncertain. The EU Member States that do not have eco-design provisions often do not have any domestic manufacturers of cars.

Unlike the WEEE Directive, the ELV Directive does not include collection targets, although it mandates source separation/collection. This is also reflected in the measures, such as specification of geographical area that needs to be covered, to enhance convenience for final owners when bringing their cars to the designated collection points.

A number of countries set specific mandates related to tyres, such as landfill bans, reuse/recycling/recovery targets, take-back requirements and the like.

#### Suggestion for classification and further investigation

- Differences of the measures taken by countries with or without domestic manufacturers and its implication to reuse/recycling/recovery achievements.
- In countries where specific mandates exist both for cars and tyres, the concrete implementation mechanisms, division and coordination of activities between economic entities related to cars and those related to tyres.

## 5. Recycling policy instruments for batteries and accumulators

Table 5-1 indicates the recycling policy instruments for batteries and accumulators used in the EEA member countries.

*Table 5-1: Recycling policy instruments for batteries and accumulators used in the EEA member countries*

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill bans	Mandatory	National	NL (those separately collected)	1
Incineration bans	Mandatory		-	0
Material restrictions	Mandatory	National	AT, BE, BG, CH, CZ, DE, FI, IE, IT, MT, NL, RO, SE, SI, SK	15
Eco design requirements	Mandatory		SI, DE	2
Minimum recycled materials content standards			-	0
Source separation requirements	Mandatory	National/Municipal	CH (retailers), CZ (municipal), NL (producers)	3
Waste prevention targets			-	0
Collection targets	Mandatory	National/Regional/Municipal	BE, MT, NL, IT	4
Landfill diversion targets			-	0
Reuse targets	Mandatory	National	BG	1
Recycling targets	Mandatory	National	BG, NL, PL (consumer batteries), SK	4
Recovery targets	Mandatory	National	PL (consumer batteries)	1
Producer's take-back requirements	Mandatory	National/Regional	AT, BE (retailers), CH (retailers), DE, IE (retailers, importers, manufacturers), NL	6
Deposit-refund systems	Mandatory	National	DE (SLI), RO (car batteries)	2
Taxes on virgin materials			-	0
Taxes on hazardous substances			SE (Ni-Cd)	1
Landfill taxes	Mandatory	National/Regional	AT, BE, CH, CZ, DK, EE, FI, FR, IE, IT, LV, NL, PL, SE, UK	15

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Incineration taxes	Mandatory	National/Regional	BE, DK, NO, SE*	4
Waste disposal taxes/fees			NL (fee)	1
Recycling fees			SK (recycling fund)	1
product charges/fees/taxes	Mandatory	National	BE (tax, except for those on DRS), BG, DK (tax, Ni-Cd, to be used for collection), HU, IT (producers, lead), LT, LV, SE	8
Tax reduction/Exemption	Mandatory	Regional	BE (exemption, for source separated waste)	1
Tradable recycling credits			-	0
Subsidies for collection		National	DK	1
Information measures	Mandatory	National/Regional	AT, BE, BG, DE, EE, IE, IT, NL, RO, SK, SE	11

\* In Sweden, the abolishment of incineration tax was proposed to the Parliament in 2009 (Regeringen 2009) and it was decided that it will be abolished on 1 October 2010.

Sources: Country fact sheets on waste policies 2006 edition (25 countries), country fact sheets on waste policy 2009 edition (16 countries), EEA (2006), Langrova (2002), Sahlin et al. (2007), Speck et al. (2006), Sweden: Lag (1999:673), Tojo (2004), VROM (2001a).

A general observation regarding the recycling policy measures for batteries and accumulators is that information on this issue is scattered, with a very limited number of comparison studies. Unlike packaging, WEEE and ELV, the author could not find any studies surveying the situation of all the EU Member States. This may be partly to do with the fact that the EU Directive on batteries and accumulators, until it was repealed by the Directive 2006/66/EC, was limited to material restriction. Source separation and recycling was encouraged but not mandated, and no collection and recycling targets were set. This situation will most likely change with the transposition of the Directive 2006/66/EC. The new Directive is based on the concept of producer responsibility, and it includes, among others, collection and recycling targets and labelling requirements.

As the EU Member States are supposed to have transposed the Directive into their national laws by 26 September 2008, it is important to follow up their implementation status.

#### Suggestion for classification and further investigation

- As most of the EU Member States are most likely in the process of transposing the Directive, it would be better to wait to classify them until at least the majority finish their transposition.
- From historical perspective, the results of those with or without established collection and recycling infrastructure, as manifested in the existence of EPR program, could be compared. However, at this moment, it is unclear how much we gain from these new studies in light of the few existing studies.

## 6. Recycling policy instruments for municipal solid waste

Table 6-1 summarises the recycling policy instruments for municipal solid waste used in the EEA member countries. Municipal solid waste (MSW) is inherently different from the four waste streams mentioned in the previous four chapters in that it is composed of a number of waste streams and not only of waste streams originated from specific categories of products. Naturally, product-oriented measures (e.g. material restrictions, eco-design requirements, minimum recycled content standards, producer's take-back requirements, deposit-refund systems, taxes on virgin materials or hazardous substances, product fees) are not used for this stream and are excluded from the table.

*Table 6-1: Recycling policy instruments for municipal solid waste used in the EEA member countries*

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill bans	Mandatory	National /Regional	AT (requires pre-treatment, mixed waste), BE (unsorted waste), CH (combustible), DE (max 5% carbon content), DK (combustible waste), EE (unsorted MSW), FI (household waste without sorting BMW), NL (combustible waste), SE (combustible waste & organic waste)	9
Incineration bans	Mandatory		-	0
Source separation			-	0
Mechanical pre-treatment obligation	Mandatory	National	EE	1
Waste prevention targets	Mandatory	National /Regional	BE (13% in 2007 as compared to 2000, <180kg/cap 2003, <165kg/cap 2005, <150kg/cap 2007), FI(15% in 2005 as projected based on the figure in 1994), MT (less than 300kg/capita/annum by 2010), UK (less than 300 kg/capita/annum by 2020)	4
Collection/source separation targets	Mandatory	National /Regional	BE (different between regions), IT (gradual increase from 35% by 2006 to 65% by 2012)	2
Landfill diversion targets	Mandatory	National	IE (50% by 2013), UK (from 90% to 30%)	2
Reuse targets	Mandatory	national	NL (household waste, 60% by 2015 together with recovery)	1
Recycling targets	Mandatory	national	DK (20%), IE (35%), FI (50%), NL (60%), SE (50%), SK (40%), UK (different between regions)	7
Recovery targets	Mandatory	National/Regional	FR (50%), FI(30% in 2015), NL (household waste, 60% by 2015), SK (20%), UK (energy recovery, 14%)	5

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill taxes	Mandatory	National/ Regional	AT ,BE, CH, CZ, DK, EE, ES, FI, FR, IE, IT, LV, NL, NO, PL, SE, SI, SK, UK	19
Incineration taxes	Mandatory	National/ Regional	BE (differentiated with or without energy recovery), DK , NO, SE*	4
waste disposal taxes/fees		Local	CH, CZ, DK (charges), EE (fees paid to private companies, the limits can be set by municipalities), FR, FI (to municipalities, plants), IT (PAYT), IE (PAYT), LT, LV, NL (PAYT), SE	12
Recycling fees			-	0
Tax reduction/exemption		Regional	BE (exemption for source separated waste, reduction for waste to be incinerated)	1

\* In Sweden, the abolishment of incineration tax was proposed to the Parliament in 2009 (Regeringen 2009) and it was decided that it will be abolished on 1 October 2010.

Sources: Country fact sheets on waste policies 2006 edition (25 countries), country fact sheets on waste policy 2009 edition (16 countries), EEA (2005b), EEA (2006), EEA (2009), Sahlin et al. (2007), Speck et al. (2006), Sweden: Lag (1994: 1776), Sweden: Lag (1999:673), VROM (2001e)

A large number of EU Member States introduce financial (landfill taxes) and administrative measures (landfill bans, landfill diversion targets) to stop municipal solid waste from being landfilled. Landfill bans found in 9 EU Member States clearly promote waste sorting and incineration of waste that can be combusted. The former (waste sorting) have potential for higher recycling/composting.

In addition, a handful of countries started to have general reuse/recycling/recovery targets for the overall municipal waste stream. This would, together with the recycling targets set on specific waste streams, enhance source separation and recycling. This is most likely triggered by the new mandates set forth in the renewed EU Waste Framework Directive of 2008/98/EC. In addition to the general boost for activities that promote reuse and recycling, the revised Directive mandates EU Member States to achieve 50% recycling targets of glass, metal, paper and plastic wastes from households by 2020. How the overall targets interact with the targets set in specific waste streams could be an interesting aspect to consider further.

Four EU Member States introduced waste prevention targets. The impact on the overall reduction of material consumption depends on whether the targets are set for the overall waste generation, including those fractions that are recycled, or only for the residual waste. In the case of the latter, the targets, if implemented stringently, would facilitate further sorting of recyclable waste stream.

#### Suggestion for classification and further investigation

- Countries with various measures that may promote recycling (e.g. landfill bans that promote waste sorting, general reuse/recycling/recovery targets on MSW, waste prevention targets) and their actual effect on the promotion of source separation of recyclable waste streams.
- Countries with the general reuse/recycling/recovery targets on MSW and its interaction with reuse/recycling/recovery targets for specific waste streams





## 7. Recycling policy instruments for biodegradable municipal waste

Table 7-1 summarises the recycling policy instruments for biodegradable municipal waste used in the EEA member countries.

*Table 7-1: Recycling policy instruments for biodegradable municipal waste used in the EEA member countries*

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill bans	Mandatory	National/ Regional	AT (untreated waste), BE, CZ, DE (restriction in BMW content within MSW), DK (combustible waste), EE (gradual reduction with numerical targets), FI, FR, HU (organic waste, partial), IT, NL(those separately collected), NO, SE (combustible waste & organic waste)	13
Incineration bans	Mandatory		-	0
Material restrictions	Mandatory		-	0
Minimum recycled materials content standards			-	0
Source separation/collection requirements	Mandatory	National/ Regional/ Municipal	AT (paper, biowaste*), BE (paper, biowaste), DK (paper), DE (paper packaging, biowaste), EE (paper packaging, biowaste), ES (biowaste), FI (paper), FR (biowaste), IT (paper, biowaste), HU (paper), NL (biowaste), SE (paper), SI (paper, biowaste) SK (paper packaging biowaste)	14
Waste prevention targets	Mandatory	Regional	BE (food, garden, paper)	1
Collection targets	Mandatory	Regional/ Municipality	BE (paper, biowaste), DK (paper), FI (paper), FR (paper), NL (paper), PT (biowaste), SE (paper)	7
Landfill diversion targets	Mandatory	National/Regional	BE, BG, EE, EL, ES, FI, HU, IE, IT, LV, LT, MT, PL, PT, RO, SK, SI, UK	18
Reuse targets			-	0
Recycling targets	Mandatory	National	ES (paper, biowaste), LU (biowaste), PL (paper, compost requirement for garden waste), SE (food waste), SK (BMW total)	5
Recovery targets			-	0
Producer's take-back requirements			-	0
Deposit-refund systems			-	0
Taxes on virgin materials			-	0

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Taxes on non-biodegradable sales packaging			RO	1
Landfill taxes	Mandatory	National/Regional	AT, BE, CH, CZ, DK, EE, ES, FI, FR, IE, IT, LV, NL, NO, PL, SE, SI, SK, UK	14
Landfill allowance trading scheme	Voluntary	Regional	UK	1
Incineration taxes	Mandatory	National/Regional	BE (differentiated with or without energy recovery), DK, NO, SE**	4
Waste disposal taxes/fees	Mandatory		IE (PAYT)	1
Recycling fees			-	0
Product charges/fees/taxes	Mandatory	National	LV (food waste/garden-garden waste)	1
Taxes reduction/exemption	Mandatory	Regional	BE (for source separation)	1
Fine for excessive landfilling	Mandatory	Regional	UK	1
Subsidies for the use of compost	Voluntary	Regional	IT	1
Quality standards for compost	Mandatory	National/Regional	BE, DK, IT, NL	3
Certification/quality assurance systems for compost	Voluntary	National	DE, IT, SE (certification of compost and bio-fertiliser)	2

\* biowaste in this case refers to garden waste and green food waste.

\*\* In Sweden, the abolishment of incineration tax was proposed to the Parliament in 2009 (Regeringen 2009) and it was decided that it will be abolished on 1 October 2010.

Sources: Country fact sheets on waste policies 2006 edition (25 countries), country fact sheets on waste policy 2009 edition (16 countries), COM(2005) 105 final, Crowe et al. (2002), EEA (2005b), EEA (2009), OECD (2007), Sahlin et al. (2007), Speck et al. (2006), Sweden: Lag (1999:673), VROM (2001f).

The EU legislation that directly addresses biodegradable municipal waste (BMW) is the Landfill Directive 1999/31/EC. Reflecting the Directive, the majority of the EU Member States have implemented measures to promote diversion of BMW from landfills (landfill bans, landfill diversion targets, landfill taxes). The countries that have not introduced the landfill diversion targets set in the Directive 1999/31/EC have already achieved the targets set in the Directive.

In order to ensure diversion of BMW from landfill, various policy instruments to promote source separation have been implemented. Source separation requirements have been introduced by the majority of Member States. In addition, a few countries introduced collection targets and/or recycling targets for BMW. In the United Kingdom, England

introduced the Landfill Allowance Trading Scheme with the aim to achieve the landfill diversion targets in a cost effective manner (OECD, 2007).

With the recognition of the importance of the securing the quality of compost materials (see, for instance, EEA 2001, European Commission, 2000), a few countries started to introduce concrete measures to assure the quality of composted materials. It would be interesting to see how this might lead to the increased use of composted materials.

Suggestion for classification and further investigation

- collection and/or recycling targets for BMW and its implication to the effect on diversion of BMW sent to landfills.
- Countries with/without policy measures to guarantee the quality of composted materials and its implication to the development of market for/use of composted materials.
- Countries with separate collection schemes for garden waste/green kitchen waste (bio waste).
- Countries with mandatory collection schemes of paper waste.

## 8. Recycling policy instruments for construction and demolition waste

Table 8-1 summarises the recycling policy instruments for construction and demolition waste used in the EEA member countries.

*Table 8-1. Recycling policy instruments for construction and demolition waste used in the EEA member countries*

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Landfill bans	Mandatory	National/ Regional	BE, CH (combustible fractions) NL (combustible fractions, recycled concrete)	3
Incineration bans			-	0
Material restrictions			-	0
Source separation	Mandatory	National/ Regional/ Municipal	AT(8 specific materials), BE, DE , FI, LT, SI	4
Recovery requirements	Mandatory	National	AT (those recoverable)	1
Waste prevention targets	Mandatory	National	FI(15% in 2005 as projected based on the figure in 1995), MT(30% by 2005)	2
Landfill diversion targets	Mandatory	National	SE (50% by 2010 as compared to 2004)	1
Collection/source separation targets	Mandatory	National	PL (15% by 2006, 40%, 2010, 60%, 2014)	1
Reuse targets	Mandatory	National	ES( 60%), NL (95%)	2
Recycling targets	Mandatory	National/ Regional	BE (90%), ES (60%), IE (50% by 2003, 85% by 2013)	2
Recovery targets	Mandatory	National	FI (70% in 2005), IE (50% by 2003, 85% by 2013), MT (50%), NL (95%)	4
Producer's take-back requirements	Mandatory	National	IE	1
Minimum recycled materials content standards	Mandatory	National	FI (replacement of 5 % of the natural gravel and crushed rocks used in construction or other activities with industrial and mining waste), NL (use of recycled granulate by road-traffic department of the government)	2
Deposit-refund systems			-	0
Taxes on virgin materials			BE, DK, IT SE,UK (all on pure aggregates)	0
Taxes on hazardous substances			-	0
Landfill taxes	Mandatory	National/ Regional	AT, BE, CZ, DK, ES, FR, IE, IT, NL, SI, UK	11

Policy instrument	Level of coerciveness	Level of government introducing the instrument	EEA countries using the instrument	Total number of countries
Incineration taxes	Mandatory	National/ Regional	BE, DK	2
Waste disposal taxes/fees	Mandatory	National/ Regional	AT (those to be landfilled), IT	2
Recycling fees			-	0
Product charges/fees/taxes			-	0
Tax reduction/exemption	Mandatory	Regional	BE (reduction, source separated)	1
Information measures			AT (guideline), BE(information tool), CH (guideline), FI (program)	3

Sources: Country fact sheets on waste policies 2006 edition (25 countries), country fact sheets on waste policy 2009 edition (16 countries), EEA (2005b), EEA (2006), EEA (2008), Sweden: Lag (1999:673), VROM (2001c).

This is among the least studied waste stream covered in this paper. At the moment, similar to the situation of batteries and accumulators, the available information is scattered. Meanwhile, the inclusion of numerical recycling targets set in the new Waste Framework Directive 2008/98/EC may accelerate action in this area.

#### Suggestion for classification and further investigation

- In light of the lack of overview of policy measures taken by the majority of the EEA countries, and lack of concrete information on their implementation in general, case studies of selected countries that have introduced different measures could be studied with a view to examine issues such as their policy goals and effects on the respective level of waste hierarchy.

## 9. Concluding remarks

An overall observation from the review of recycling policy instruments for the seven waste streams in the EEA countries can be summarised as follows.

- Relatively standardised measures are found to address the recycling of three waste streams originated from specific products (packaging, WEEE and ELV). With the exception of a few countries in the area of packaging, the overall approach is based on producer responsibility, with mandatory collection and/or reuse/recycling targets. The exception in this regard is batteries and accumulators. – until the 2006 Directive came into force, systematic approaches to collection and recycling of spent batteries and accumulators had been developed in only a handful of countries. This is somewhat surprising, as the problems of these waste streams have been recognised for decades and an EU directive governing batteries and accumulators has existed since 1991. Meanwhile, the 1991 Directive prohibited the use of specific heavy metals but did not specify collection and recycling targets. Lack of quantitative targets in the Directive seems to have influenced the (non-)introduction of quantitative targets at the national level.
- Eco-design requirements related to reuse/recycling are in a sense not traditional waste/recycling instrument. Inclusion of such instruments in a waste-oriented directives clearly indicates the recognition of linkage between the upstream and the downstream of products, and of the need to take preventative measures.
- Despite the non-existence of separate Directives for BMW and C&D waste, clear source separation/landfill diversion/recycling targets are found in other Directives (e.g. Landfill Directive, new Waste Framework Directive). This may help for Member States to set specific collection and/or recycling targets for these waste streams.
- Concerning measures to reduce the use of hazardous substances – thus enhance recycling and environmentally sound treatment – the prevailing measure is administrative (i.e. ban). Few fiscal measures have been identified (only one in Sweden for batteries).
- Measures to directly enhance the use of recycled materials are also limited. Hardly any information is available on the use of fiscal measures (e.g. taxes on virgin materials), and with the exception of those found in some eco-label standards, the use of minimum recycled materials content standards is limited to one case (C&D waste in Finland). However, the measures to enhance the quality of recycled materials, as found in the case of BMW, seem to be increasing.
- Overall, it is difficult to find information on policy measures in a standardised format. The terminologies used often differ from one source to the other (especially in the Fact Sheet). It appears that in some cases different terms are used to express the same thing, while in other cases they mean different things (e.g. the term levy, charges and taxes). Standardisation of these terms could be useful in enhancing the comparability of measures taken in EEA member countries.

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## National & EU Legislation

### Bulgaria

Decree No. 82 dated 10 April 2006 on the adoption of Regulation on the requirements to putting on the market of electrical and electronic equipment and treatment and transport of waste from electrical and electronic equipment

### Norway

Waste Regulations. Chapter 1. Waste electrical and electronic equipment. 2 mai 2005 nr. 406

### Finland

Waste Act (1072/1993)

### Romania

Government Decision no. 448/19.05.2005 (OJ no 491/10.06.2005) on waste electrical and electronic equipment (WEEE)

### Sweden

SFS 2007:185 Förordning om producentansvar för bilar

Lag (1999: 673) om skatt på avfall.

Lag (1004: 1776) om skatt på energi

### EU

Council Directive 1999/31/EC of 26 April 1999 on the landfill of waste. OJ L 182, 16/07/1999 P. 0091 – 0019.

Directive 2000/53/EC of the European Parliament and of the Council of 18 September 2000 on end-of-life vehicles. OJ L269, 21/10/2000 p.0034 –0043

Directive 2002/95/EC of the European Parliament and of the Council of 27 January 2003 on the restriction of the use of certain hazardous substances in electrical and electronic equipment. OJ L 37, 13.2.2003, p. 0019–0023

Directive 2002/96/EC of the European Parliament and of the Council of 27 January 2003 on waste electrical and electronic equipment (WEEE). OJ L 037, 13/02/2003 P. 0024 – 0039.

Directive 2004/12/EC of the European Parliament and of the Council of 11 February 2004 amending Directive 94/62/EC on packaging and packaging waste. OJ L 47, 18.2.2004, p. 0026–0032

Directive 2006/66/EC of the European Parliament and of the Council of 6 September 2006 on batteries and accumulators and waste batteries and accumulators and repealing Directive 91/157/EEC. OJ L 166, 26.9.2006, p. 0001–0014.

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives. OJ L 312, 22.11.2008, p. 0003–0030

## Appendix I – Brief explanation of policy instruments discussed in this paper (in alphabetical order)

<u>Name</u>	<u>Description</u>
Certification/quality assurance systems for recyclables	Endorsement of the quality of recycled materials such as compost through certification or other verification measures.
Collection targets	Numerical targets set to enhance collection of specific waste streams. A target can be relative (e.g. percentage of what is put on the market) or absolute (e.g. 4kg/person/year).
Deposit-refund system	A system in which an entity purchasing a product pays an extra amount of money which is returned when (part of) the product is returned. Used, for instance, to enhance collection of refillable/non-refillable beverage containers.
Eco-design requirements related to reuse/recycling	Requirements related to product design aim to enhance reusability and recyclability of products.
Eco-label	A so-called ISO Type I label. A voluntary label which is awarded to a product that meets standards set forth to address important environmental impacts of the product from life cycle perspective.
Excise/Fine	Payment required when certain legal requirement is not met.
Incineration ban	Prohibition of incinerating specific types of waste.
Incineration tax/charge	Payment of taxes or charges when incinerating specific types of waste.
Information provision requirement	Requirement to provide specific types of information. In some cases the manner in which the information is given is also specified (e.g. placing specific symbol on a product, indicating the prohibition of discarding the product in a normal waste bin). In others, it is a general requirement to provide information to specific actors such as recyclers.
Landfill allowance trading scheme	A scheme in which waste disposal authorities receive specific allowance of waste to be disposed in landfills. The allowance could be traded.
Landfill ban	Prohibition of disposing specific types of waste in the landfill.
Landfill/incineration diversion targets	Numerical targets set to divert specific types of waste (e.g. biodegradable waste) to be landfilled/incinerated.
Landfill tax/charge	Payment of taxes or charges when landfilling specific types of waste.
Material restriction	Restriction of use of specified hazardous substances within a product.
Mechanical pre-treatment obligation	Before landfilling, specific type of waste (e.g. biodegradable waste) needs to be processed in a mechanical pre-treatment plant.

Minimum recycled material content standards	Obligations to use certain amount of recycled materials in a new product.
Producer's take-back requirements	Obligations given to a producer to take-back end-of-life products manufactured/imported by him/her. This is in most cases combined with obligation to reuse/recycle the collected end-of-life products and their environmentally sound treatment.
Product taxes/fees/charges	Taxes, fees and charges that consumers pay when buying a product in order to address end-of-life environmental impacts of the product.
Quality standards for recyclables	Standards set for the quality of recyclables such as compost to enhance their use.
Recovery targets	Numerical targets set to enhance the recovery of materials from specific waste streams.
Recycling fees/charges	Fees and charges to be paid when purchasing (and in some limited cases) or discarding products which are recycled.
Recycling targets	Numerical targets set to enhance the recycling of materials consisting of specific waste streams.
Requirements on increased use of recycled materials	General obligations to increase the use of recycled materials in new products without specific numerical standards.
Requirements related to geographical coverage of collection points	Specific obligations given concerning the location of collection sites for specific waste stream to enhance the convenience of entities discarding the end-of-life products.
Reuse requirement	General obligations to enhance the reuse of the whole products or components of end-of-life products.
Reuse targets	Numerical targets set to enhance the reuse of products and/or their components. In the case of beverage containers it is often referred to as refillable targets.
Sorting requirements for reusable products	General obligations to separate the reusable products discarded from the last owner from other discarded products.
Source separation/collection requirements	General obligations to collect specific waste streams separately from the rest of the waste streams.
Subsidies	Provision of financial resources to encourage certain behaviour (e.g. use of compost)
Taxes on hazardous substances	Taxes on the use of specific hazardous substances in specified products to deter the use of such substances.
Taxes on virgin materials	Taxes put on the use of virgin materials to enhance the use of recycled materials.
Tax exemption/reduction	An entity is exempt from paying taxes or the amount of tax the entity has to pay is reduced as a reward of doing something positive to the environment.
Tradable recycling credits	When a recycler carries out recycling of specific waste streams, a credit that certifies the undertaking of recycling is issued. The issued credit can be traded among entities responsible for fulfilment of certain recycling targets set on

	the specific waste streams.
Waste disposal taxes/fees/charges	Taxes/fees/charges paid in relation to waste disposal.
Waste prevention requirements	General obligations to reduce waste generation.
Waste prevention target	Numerical targets set to enhance waste reduction.