


## Country Factsheet Czech Republic (CZ)

<p><i>Member State</i></p>	<p><b>Czech Republic</b></p>	
<p><i>Recent achievements</i></p>	<p>[BiPRO Landfill 2007]; [EC 2012f]; [EUROSTAT]; [Ernst &amp; Young 2011]; [RETech 2009] ; [CZ MoE 2012]</p> <ul style="list-style-type: none"> <li>– 100 % collection coverage</li> <li>– EU legal requirements are well implemented in national waste legislations</li> <li>– considerable recycling rate; increase of recycling from 11 % to more than 16 % (2007 to 2010), however, according to [CZ MoE 2012b] 24.3 %, which is about EU average</li> <li>– especially considerable rates for packaging recycling (especially plastics), all targets for 2012 are already over-achieved in 2010</li> <li>– sufficient treatment capacity available (landfill, incineration)</li> <li>– landfill tax is implemented</li> <li>– landfills are compliant with the requirements of the Landfill Directive</li> <li>– incentive systems to favour prevention and participation to separate collection (PAYT schemes) are in place in some municipalities of the country (about 10-15 % covered [CZ FoE 2012])</li> <li>– progress in bio-waste collection and treatment</li> <li>– Government provides documents and guideline for basic characterisation of waste, training of regional authorities and regular meetings with central authorities and performs evaluation of waste management on a yearly basis</li> <li>– several initiatives launched by Government to improve the waste management (i.e. on packaging waste, awareness raising via workshops, exhibitions addressing the public, promotion of reuse of packaging (e.g. carrier bags, beverage packaging))</li> <li>– general environmental awareness of the public and consumers is existent, but their behaviour needs to be strengthened with regard to waste management</li> </ul>	
<p><i>Population</i></p>	<ul style="list-style-type: none"> <li>– Total population in 2011: 10,532,770 [EUROSAT 2012c]</li> </ul>	
<p><i>Population density</i></p>	<ul style="list-style-type: none"> <li>– inhabitants per km<sup>2</sup>: 134 per km<sup>2</sup> [EUROSTAT 2012c]; [CIA 2012]</li> <li>– ~ 74 % of total population living in urban areas in 2010 [CIA 2012]</li> </ul>	
<p><i>Geographical particularities</i></p>	<p>CZ covers an area of 78,867 km<sup>2</sup>. It is a land-locked country in the temperate zone of central Europe [EEA 2010b]. The climate is characterised with cool summers and cold winters with regular flooding. Most of the country surface lies below 500 m (67 %), the rest lies between 500 and 1,000 m. The western part of CZ consists of rolling plains, hills and plateaus surrounded by low mountain; the east consists of very hilly countryside [CIA 2012]. Prague, the largest city and capital (1.4 million inhabitants, 2009), is located at the Moldau [EEA 2010b]. Other larger cities are Brno (400,000), Ostrava (300,000), Plzen (170,000), Liberec, Olomouc Ústí nad Labem, České Budějovice, Hradec Králové (each 100,000), [RETech 2009].</p>	

### Features of the national waste management system

<p><i>Competent authorities</i></p>	<p>The competent authority responsible for the waste management on national level is the <b>Ministry of Environment</b> ('Ministerstvo životního prostředí – MŽP'), Waste Management Department. The MoE provides for the implementation of EU provisions in national legislation and elaborates the national waste management plan (WMP).</p> <p>Further there are competent authorities at the level of the <b>13 regions and the city of Prague</b>. Each region draws up a regional WMP, which has to be compliant with the national WMP. Further the regional authorities are responsible for permitting recovery and disposal operations and for registration of establishments and undertakings [CZ WFD 2007-2009].</p> <p>Monitoring, controls and inspections are within the responsibility of the <b>Czech Environmental Inspectorates</b> (CEI, 'Česká inspekce životního prostředí') with its 10 <b>local inspection offices</b>.</p> <p>Since 2006, practical implementation lies in the responsibility of the <b>6,251 municipalities</b> and communal environmental offices/inspectorates. [CZ MoE 2012d]; [RETech 2009].</p> <p>The 10 local inspection offices are performing <b>inspection and controls</b> (field activities) and are able to impose fines and stipulate remedy measures for all provisions based in Waste Act. However also the regional and the sub-regional authorities (from the municipalities – in total 206 with extended responsibility) can perform inspection and controls; however they have limited possibilities to impose fines (regional authorities cannot, municipalities can in some cases as defined in the Waste Act [CZ CEI 2012].</p> <p>Further there exists <b>Council of Waste Management</b> as one of the advisory board to the Minister, including the Czech Republic Waste Management Board, the counties, leading experts from all government departments as well as the non-governmental sector (universities, professional association, NGOs), [http://www.mzp.cz/en/waste]. However according to Members of the Council information exchange and procedures can be improved [FoE 2012].</p>
<p><i>Informal sector</i></p>	<p>The importance of the informal sector in waste management is low. Some scattered small enterprises sort and trade recyclables within organized activities partly including socially disadvantaged groups. In border regions the import of foreign consumer goods occurs [RETech 2009]. [CZ CEI 2012] also reports informal activities in the field of construction waste and WEEE and ELV, were mainly poor, homeless people collect, dismantle and deal with scrap. This problem seems also connected to illegal dumping activities. Illegal dumps have to be removed by the municipalities on their costs.</p> <p>Other sources state, that especially informal sector of the Czech Republic is very active in the waste collection in the north of Germany [http://www.transwaste.eu/file/001444.pdf accessed on 7 February 2012].</p>
<p><i>State of public awareness</i></p>	<p>The State Program of Environmental Education and Public Awareness in the Czech Republic (hereinafter EEPA) (Government Resolution No. 1048 of October 23, 2000), within its objectives, formulates the requirement to "provide for appropriate education and knowledge of employees in all sectors and at all levels of public administration in the area of the environment" [CZ WMP 2003-2013].</p> <p>Schools activities (including a website for children, (http://www.tonda-obal.cz) and public training for municipalities, towns and cities have also been undertaken, together with an advice service for municipalities on optimising the separate collection of household waste [EC 2012c].</p>
<p><i>Occurrence of structural dumping, fly tipping and littering</i></p>	<p>According to [CZ CEI 2012] there exist random activities on illegal dumping. However, there is no statistical data on this issue on national level. Currently those dumps are not usually set up by citizens - only in some cases smaller dumps occur with green /bio-waste (lack of capacity and support of home composting in some municipalities) or parts of car wrecks (ELV) or WEEE (e.g. plastics or metal parts near to scrap dealers sites mainly collected and brought by poor, homeless people).</p> <p>Further there are some bigger dumps of unknown origin, but due to the composition (mixed construction waste, waste from scrap dealers, parts of car wrecks) can be assessed that majority of illegal dumps are of company waste origin. Such dumps with unknown origin are removed by and on cost of municipalities.</p>

	<p>Illegal shipment of waste and dumping on the territory of Czech Republic, in the majority of cases originating from North-East Germany identified in 2005/2006. Illegal imports comprised textiles, plastics and mainly mixed municipal waste including hazardous components such as glues, paints or medical residues [EEA 2010].</p> <p>No publicly available national based compilation of data on illegal dumping has been identified, however Ministry of the Environment is the operator of the database of transboundary movement. MoE reports yearly summary data from the transboundary shipment within the Report on the Environment of the Czech Republic.</p>
<p><b>Legislation</b></p>	
<p><i>National</i></p>	<p><b>Waste Framework Directive</b> [Eur-Lex 2012]: The WFD is transposed by Law No 154/2010 Coll., amending Act No. 185/2001 Coll. on waste and amending certain other acts, as amended.</p> <p>The law came into force 1 July 2010. It incorporates the relevant provisions of the EU WFD. With regard to this law further amendments were made to other legal acts, all listed in EUR-Lex (<a href="http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:72008L0098:EN:NOT%23FIELD_CZ">http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:72008L0098:EN:NOT%23FIELD_CZ</a>). The new waste law includes stricter requirements in terms of the collection of bio-waste, increase of the landfill tax and waste fee for inhabitants (maximum of about 40 €/inhabitant/year) and the possibility for wastes under the producer responsibility (e.g. packaging) to use the municipal collection systems [CZ MoE 2012b] [RETech 2009]. However, according to information of Members of Council of Waste Management legal obligations and requirements changed a lot in the last periods, this making the requirements to municipalities and industry unreliable [CZ FoE 2012].</p> <p>According to [Ernst &amp; Young 2011] the EU waste legislation is partial implemented in CZ (calculated of 90 % implementation). Deficits are in particular detected in the clear transposition of recycling and recovery targets for waste materials. However, MoE stated the full transposition into national legislation by the Act on Waste.</p> <p><b>Landfill Directive and WAC Decision</b> [EIONET 2009]; [Eur-Lex 2012];</p> <ul style="list-style-type: none"> <li>– Law No 154/2010 Coll., amending Act No. 185/2001 Coll. <b>on waste</b> and amending certain other acts, as amended</li> <li>– Decree No 341/2008 Coll., on the details of the <b>management of biodegradable waste</b> and amending Decree No 294/2005 Coll., on conditions of <b>depositing waste in landfills</b></li> <li>– Decree No. 294/2005 Coll., on the <b>conditions of landfilling of waste</b> and <b>use of waste on surface</b> and amendment of Decree No. 383/2001 Coll., on details of waste management and for recovery of waste through its application to land, and amending Implementing Decree No 383/2001 laying down details for managing waste</li> </ul> <p>Decree No. 294/2005 Coll. includes the basic conditions for monitoring during operation and closure period of landfills, the impact on the surrounding environment, etc. The necessary parameters and their measurement were detailed (emission of odours and dust, wind-blow waste, noise and traffic, birds, insects and animals, aerosols, fires, etc.). It also refers to the following technical standards [EC 2012e]:</p> <ul style="list-style-type: none"> <li>– 83 8030 Landfilling of waste - Basic conditions for designing and buildings landfills and collection of landfill gas;</li> <li>– 83 8033 Management of landfill leachate;</li> <li>– 83 8034, laying down the principles for the design, construction, testing and operation of gas installations where landfill gas is produced;</li> <li>– 83 8035 Landfilling of waste - Closure and rehabilitation of landfills;</li> </ul>

- 83 8036 Landfilling of waste - Monitoring landfills.

All relevant **criteria of the WAC Decision** have been transposed into the Czech law in the Sections 3 and 4 and Annexes 1, 2, 3 and 4 to Implementing Decree No 294/2005. The Guidance Note for Drafting the Basic Description of Waste in its Journal of February 2007 was published. It is intended not only as a help to those drafting a basic description of waste but also as a guide to defining basic characteristics of waste for the more general requirements of the Waste Act. It may also be used by the state authorities during the inspection activities [EC 2012e].

Every **landfill construction plan** is subject to the permitting procedure under Act No 183/2006 on land-use planning and building regulations (the Building Act), [EC 2012e].

The Czech Republic has not made **use of exemptions** for non-hazardous wastes (Art. 3(3) LD), exclusion of islands/isolated settlements (Art 3(4) LD), underground storage (Art. 3(5) LD), [EC 2012e].

In regard to this law further amendments were made to other legal acts, all listed in EUR-Lex [<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:71999L0031:EN:NOT>]

**Packaging Directive** [Eur-Lex 2012]:

- Act No. 477/2001 Coll., on packaging and governing the collection and handling of packaging waste, and amending certain other acts
- Decree No. 115/2002 Coll., on details of management of packaging
- Decree No. 116/2002 Coll., on labelling returnable packaging for which a deposit is made
- Decree No. 117/2002 Coll., on the extent and means of keeping records of packaging and reporting of information from these records [CZ WMP 2003-2013].

The Czech Republic is fully in line with the Packaging Directive [FoE 2012].

For the management of **biodegradable waste**, the Decree No 341/2008 Coll. provides details for the management of such wastes [[http://www.mzp.cz/cz/biologicky\\_rozlozitelne\\_odpady](http://www.mzp.cz/cz/biologicky_rozlozitelne_odpady)].

The document '**Proposal for the advanced development of waste management**' (approved the Government on 25 August 2010) will serve as a basis for the preparation of the new waste legislation of waste management [[http://www.mzp.cz/cz/rozvoj\\_odpadoveho\\_hospodarstvi](http://www.mzp.cz/cz/rozvoj_odpadoveho_hospodarstvi)].

Czech Ministry of the Environment is actually **preparing a complex reform of the waste legislation** (planned entry into force since 1st January 2014). This change includes amendment of the Packaging act, elaboration of the new act on waste (for example the landfill tax will gradually increase – planning foresees doubling in 2016, tripling in 2020); however this is not agreed on [CZ MoE 2012] and new act regarding WEEE, batteries, tyres and ELVs [CZ MoE 2012].

## WMP and WPP

### National

The **National WMP** of the Czech Republic (2003-2013) was published in the form of a Government Regulation in compliance with the Waste Act (Regulation No 197/2003). In 2009 Regulation No 473/2009 was published, revising the WMP. The most important provisions of the Czech WMP are [CZ BIOM 2003]:

- Achieving the target of increasing recovery with preference given to recycling, with a statutory target of 55 % of all waste produced by year 2012; increase recovery of municipal waste to 50 % by 2010
- Decrease the amount of bio-degradable wastes deposited in landfills, according to the EU Landfill Directive (maximum of 75 % by weight in 2010 and 50 % in 2013 in comparison with the year 1995)
- Support the management of bio-degradable waste (reduce contamination with hazardous components and preparations, prefer composting and anaerobic digestion for final use in agriculture, land reclamation, landscaping, biofuel production)
- Prepare a strategy to support the market for recycled products and "Implementation Program" for

	<p>biodegradable wastes</p> <p>In English: <a href="http://www.mzp.cz/C125750E003B698B/en/waste/\$FILE/waste_management_plan.pdf">http://www.mzp.cz/C125750E003B698B/en/waste/\$FILE/waste_management_plan.pdf</a></p> <p>In Czech: <a href="http://www.mzp.cz/cz/plan_odpadoveho_hospodarstvi">http://www.mzp.cz/cz/plan_odpadoveho_hospodarstvi</a> (including document on revision)</p> <p>New National WMP 2013-2023 is currently in the process of preparation. [CZ MoE 2012a] [CZ FoE 2012]</p> <p><b>Regions</b> have to draw own Regional WMPs which have to comply with the National WMP of the Czech Republic. Other waste producers including municipalities which are producing more than 1,000 t of non-hazardous waste / 10 t of hazardous waste per year have to draw own WMPs – however there is a governmental amendment to cut duty for other waste producers in Parliament; so this obligation will be probably skipped in near future. Discussion is ongoing in 2012. [CZ CEI 2012][CZ FoE 2012].</p> <p>The national and also regional WMPs include the strategy on the reduction of biodegradable waste going to landfills [EC 2012e].</p> <p>The implementation and performance of the WMP is <b>reviewed annually</b> by means of an Assessment Report, published on the Ministry website [<a href="http://www.mzp.cz/en/waste">http://www.mzp.cz/en/waste</a>] and sent as the information to the Government of the Czech Republic.</p> <p>A <b>Waste Prevention Programme</b> (WPP) is not established yet as own plan nor integrated into the current WMP yet. However it will be the part of the new WMP and published by the MoE as a strategy document itself. The national WPP is planned to enter into force by end of 2013.</p>
Regional	<p>14 regional WMPs are available [CZ WFD 2007-2009] for the period 2004-2014:</p> <ul style="list-style-type: none"> <li>– <b>Capital City Prague</b> (Hlavní město Praha): <a href="http://www.praha14jinak.cz/clanky/Krajsky-Plan-odpadoveho-hospodarstvi-hl-m-Prahy.html">http://www.praha14jinak.cz/clanky/Krajsky-Plan-odpadoveho-hospodarstvi-hl-m-Prahy.html</a></li> <li>– <b>South Moravian region</b> (Jihomoravský kraj): <a href="http://www.kr-jihomoravsky.cz/Default.aspx?PubID=4945&amp;TypeID=2">http://www.kr-jihomoravsky.cz/Default.aspx?PubID=4945&amp;TypeID=2</a></li> <li>– <b>South Bohemia region</b>, valid until 2014 (Jihočeský kraj): <a href="http://www.kraj-jihocesky.cz/index.php?par%5bid_v%5d=10&amp;par%5blang%5d=CS&amp;par%5bid_normy%5d=394">http://www.kraj-jihocesky.cz/index.php?par%5bid_v%5d=10&amp;par%5blang%5d=CS&amp;par%5bid_normy%5d=394</a></li> <li>– <b>Karlovarský Region</b> (Karlovarský kraj) <a href="http://www.kr-karlovarsky.cz/kraj_cz/karlov_kraj/dokumenty/koncepce/seznam/Plan_odpady.htm">http://www.kr-karlovarsky.cz/kraj_cz/karlov_kraj/dokumenty/koncepce/seznam/Plan_odpady.htm</a></li> <li>– <b>Králové Region</b> (Královéhradecký kraj): <a href="http://www.kr-kralovehradecky.cz/prez/odpad_hosp/prezentace/prezent.htm">http://www.kr-kralovehradecky.cz/prez/odpad_hosp/prezentace/prezent.htm</a></li> <li>– <b>Liberec region</b> (Liberecký kraj) <a href="http://www.kraj-lbc.cz/public/kap1_2_6fe8cbc087.pdf">http://www.kraj-lbc.cz/public/kap1_2_6fe8cbc087.pdf</a></li> <li>– <b>Moravian-Silesian region</b> (Moravskoslezský kraj) <a href="http://iszp.kr-moravskoslezsky.cz/cz/temata/koncepce/plan-odpadoveho-hospodarstvi-moravskoslezskeho-kraje-11/">http://iszp.kr-moravskoslezsky.cz/cz/temata/koncepce/plan-odpadoveho-hospodarstvi-moravskoslezskeho-kraje-11/</a></li> <li>– <b>Olomouc region</b> (Olomoucký kraj) <a href="http://www.kr-olomoucky.cz/odpadove-hospodarstvi-cl-269.html">http://www.kr-olomoucky.cz/odpadove-hospodarstvi-cl-269.html</a></li> <li>– <b>Pardubice region</b> (Pardubický kraj) <a href="http://www.pardubickykraj.cz/article.asp?thema=3036&amp;item=31574&amp;category=">http://www.pardubickykraj.cz/article.asp?thema=3036&amp;item=31574&amp;category=</a></li> <li>– <b>Plzeňský region</b> (Plzeňský kraj) <a href="http://www.kr-plzensky.cz/article.asp?itm=27098">http://www.kr-plzensky.cz/article.asp?itm=27098</a></li> <li>– <b>Vysočina Region</b> (Vysočina kraj) <a href="http://www.kr-vysocina.cz/plan-odpadoveho-hospodarstvi-kraje-vysocina-poh-kv/d-1326686/p1=2088">http://www.kr-vysocina.cz/plan-odpadoveho-hospodarstvi-kraje-vysocina-poh-kv/d-1326686/p1=2088</a></li> <li>– <b>Central Bohemian region</b> (Středočeský kraj) <a href="http://www.kr-stredocesky.cz/portal/odbory/zivotni-prostredi-a-zemedelstvi/odpadove-hospodarstvi/materialy-stredoceskeho-kraje/plan-odpadoveho-hospodarstvi-stredoceskeho-kraje.htm">http://www.kr-stredocesky.cz/portal/odbory/zivotni-prostredi-a-zemedelstvi/odpadove-hospodarstvi/materialy-stredoceskeho-kraje/plan-odpadoveho-hospodarstvi-stredoceskeho-kraje.htm</a></li> <li>– <b>Ústí region</b> (Ústecký kraj)</li> </ul>

	<p><a href="http://www.kr-ustecky.cz/vismo/dokumenty2.asp?id_org=450018&amp;id=730235&amp;p1=108201">http://www.kr-ustecky.cz/vismo/dokumenty2.asp?id_org=450018&amp;id=730235&amp;p1=108201</a></p> <p>– Zlín region (Zlínský kraj)</p> <p><a href="http://www.kr-zlinsky.cz/docDetail.aspx?docid=28494&amp;doctype=ART&amp;&amp;cpi=1">http://www.kr-zlinsky.cz/docDetail.aspx?docid=28494&amp;doctype=ART&amp;&amp;cpi=1</a></p>
<b>Instruments applied in the field of municipal waste and packaging waste</b>	
<i>Legal instruments</i>	<p><b>Landfill ban/restrictions/diversion targets</b> [EC 2012]: Landfill restrictions or a ban for biodegradable and/or compostable waste is not in place. However, biodegradable and/or compostable waste can be landfilled only as a part of the mixed municipal waste (decree 294/2005 Coll. Annex No. 5). Further, discussion on the ban of untreated MSW is undertaken [CZ MoE 2012b].</p> <p><b>Strategy on the reduction of bio-waste</b> [EC 2012e]: The strategy on the reduction of biodegradable waste going to landfills is included in the national and also regional WMPs. The strategy is being gradually introduced in connection with the requirements contained in the Czech WMP and the objectives of the Landfill Directive. Quality standards on composted bio-waste are in place.</p> <p><b>Integrated and adequate waste disposal network</b> [CZ WFD 2007-2009]: The principles for establishing an integrated and adequate waste disposal network are laid down in Government Regulation No 197/2003 on the WMP of the Czech Republic, under which support is to be provided for the construction of installations covering the whole country, designed in line with best available techniques (BAT). The operator must keep continuous records of the generation and treatment of waste and send annual reports to the relevant administrative authority (Act No 185/2001 on waste), [CZ WFD 2007-2009].</p> <p><b>Prevention of packaging waste:</b> Act No. 477/2001 Coll. requires that packaging has to be designed, produced and distributed in a way that reuse and recovery are possible [EIONET 2009]. The WMP includes binding measures and rules on prevention, and a national implementation programme for packaging and packaging waste also deals with the prevention of packaging waste formation. This programme was drawn up by a working group which included representatives of the economic operators concerned comprising waste management companies, packaging and packaging materials producers, users and distributors of packaging and packaging recovery organisations [EC 2012c]. However the obligation of preventing packaging waste is not accompanied by real actions and the implementation programme does not foresee specific measures to implement this requirement [CZ FoE 2012].</p>
<i>Economic and fiscal instruments</i>	<p><b>Landfill tax / gate fee/typical charge:</b> A landfill tax has been introduced in 1992 and is about 20 €/t. Planning foresees to gradually increase the landfill tax; doubled in 2016, tripled in 2025 [CZ MoE 2012], however exact conditions yet have to be agreed on [CZ FoE 2012]. The tax is based on basic component for the actual deposition of waste and a risk component [EIONET 2009]. The average gate fee for one tonne of municipal waste is 16 €, ranging from 12 to 20 €; the typical charge is calculated with 36 €/t of municipal waste [EC 2012]. According to more recent information from [CZ MoE 1012b] gate fees currently range from 32 €/t to 48€/t.</p> <p><b>Incineration tax/gate fee</b> [EC 2012]: An incineration tax is not in place. The average gate fee for the incineration of municipal waste is 46 €/t, ranging from 36 to 56 €. Incentives for ‘energy to waste’ and restrictions for incineration are not known. CZ provides for the use of renewable energy feed-in tariffs and premiums; for the use of landfill and sewage gas use the tariff is 121,2 €/MWh (feed-in) [CZ FoE 2012] and 55.3 €/MWh (premium).</p> <p>[EC 2012]: Pay-as-you-throw systems are implemented on a municipal basis. In the year 2002 1 ‘pure’ and 24 ‘combined schemes’ have been reported (out of 162 municipalities). According to [CZ FoE 2012] this counts for about 10–15 % of the municipalities and PAYT is mostly implemented in smaller municipalities. PAYT yet is not the standard and information about quality of the systems is not available. The systems applied are either volume or frequency based. There is the possibility in legislation for the municipalities to establish PAYT as the part of the municipal waste management; however the Ministry of the Environment does not have any data on the number of municipalities which decided to do so [CZ MoE 2012b] [CZ FoE 2012].</p>



**Financial reserve of landfill operators** [EIONET 2009]: Landfill operators are obliged to create a financial reserve for recovery and maintenance of landfills and for decontamination after termination. Financial reserve is kept in a special escrow account and the landfill operator may draw funds from this account only with the consent of the competent municipal authority of a municipality with extended competence. The amount of financial reserve equals 1.40 €/t of non-hazardous waste.

**Packaging waste** [EC 2012]: The deposit on returnable packaging pursuant to the Act on Packaging is set at a uniform amount for certain types of returnable packaging, serving as another economic instrument. Deposit-refund systems for glass bottles have been introduced already in 1950 [OECD/EEA 2012]. Producer responsibility scheme (Green dot systems) has been introduced for packaging waste which is based on producer fee scheme; the annual participation fee (registration) is 65 €, while for the maximum average fee per tonne of waste 106 € for paper, 59 € for glass, 82 € for aluminium, 61 € for steel, 216 € for plastic and 42 € for wood are charged. The fee contributes financially to the collection, sorting and reprocessing of packaging waste, however no information is available whether all costs are covered. The system is producer led and funded; EKO-KOM is the particularly organization. Commercial premises larger than 200 m<sup>2</sup> are required to offer beverages in reusable packaging if such packaging exists on the market. However, there are problems analysed in side of market to abide this requirement [CZ FoE 2012]. For selected types of all returnable packaging, the levels of deposits were harmonised by means of a decree. Reusable packaging is deemed to have been returned or recovered if at least 55 % by weight of the packaging placed on the market or put into circulation anew is reused [EC 2012c].

#### **Subsidies / Funding;**

- 520.3 Mio. € for development of **waste management infrastructure** from the 'Operative Environmental Programme until 2013'; a list of approved project is available at: (<http://www.opzp.cz/sekce/254/aktuality/>) ('Ukázky realizovaných projektů OPŽP'), [RETech 2009]
- The State Environmental Fund, established in 2005, includes a programme to promote **environmental education** [OECD/EEA 2012].
- The implementation of the strategy to reduce the amount of biodegradable waste going to landfills (included in regional and national WMPs) is supported for the construction of **municipal treatment facilities for biodegradable waste** by the use funds of the Environmental Operational Programme [EC 2012e].
- Irregularities in public procurement and sub-optimal functioning of the management and control systems for public administration have been important sources of **problems with implementation of the EU funds**. The EC stopped payments from the EU funds to the CZ [CZ FoE 2012]. Subsequently, an action plan outlining specific steps which need to be taken before the end of June 2012 [EC 2012].

**Municipal waste fee** [EIONET 2009]; [CZ MoE 2012b] [CZ FoE 2012]: There are three ways to pay for municipal waste:

- First and mostly implicated; local fee for operation of a system of collection, transport, separation, recovery and disposal of municipal waste is limited by a maximum of about 40 € per inhabitant.
- Second; an amendment to the Act on Wastes, No. 275/2002 Coll.§ 17a, introduced an optional fee for municipal waste; the amount of this fee is not limited. This article enables municipal authority to use PAYT system.
- Third; pursuant to § 17 (5) of the Act on Wastes, payment can be made on a contractual basis between the municipality and the inhabitant; again, there is no upper limit for this payment. This article enables municipal authority to use PAYT system, as well.

The annual waste fee includes the services of civic amenity sites, thus citizens can deliver special wastes (furniture, bulky waste, hazardous waste, WEEE etc. free of additional charge)[CZ CEI 2012].

**Fines** [EIONET 2009]: Fines for administrative torts: in the range up to 400,000 €.

**Tax exemptions** [EIONET 2009]; [CZ MoE 2012b]: Tax exemptions are related to the value added tax and

	<p>real estate tax. The lower rate of value added tax (14 %, in contrast to the basic 20 % rate), applies to collection and disposal of municipal waste. Properties and structures serving exclusively for operation of recycling activities are exempted from the real estate tax.</p>
<p><i>Administrative instruments</i></p>	<p>The Czech Republic reports an adaptation of the <b>national strategy to reduce biodegradable</b> waste in terms of support for sorting of biodegradable then support for sales of the product of biodegradable waste treatment facilities [EC 2012e].</p> <p><b>Cooperation initiatives</b> [RETech 2009]:</p> <ul style="list-style-type: none"> <li>– Participation in the European compost network (ORBIT) to achieve common standards for bio-waste</li> <li>– Regional cooperation initiatives with border regions of Germany (Bavaria, Saxony) and participation in particular cooperation programmes between CZ and DE (EFRE, cil3-programme)</li> <li>– Consultation of foreign companies (e.g. technical components of treatment facilities, biogas facilities)</li> <li>– Since 2008 participation in several Twinning-activities (in particular for waste prevention, PIUS, landfill gas)</li> <li>– Cooperation for certain projects and research activities (in particular bilateral contacts, parallel education, cooperation with Universities (e.g. Germany) to facilitate studies on waste fees, incineration; use of EU funds (FP 5-7, Erasmus)</li> </ul> <p>Administrative burden in general is valued as too high in CZ, in particular for starting up businesses. Some progress has been achieved to eliminate capital requirements and to simplify registration procedures, e.g. e-government initiatives (co-funded by the European Regional Development Fund). The 2012 national reform programme also outlines additional measures in this area. [EC 2012f].</p> <p><b>Cooperation and data bases for performing controls and inspections</b> and detecting illegal activities by operators are according to [CZ CEI 2012] well established. In some areas there is a very good information exchange even on international level (e.g. waste shipments). Tools to detect illegal activities are provided by the Czech MoE and CENIA (Czech Environmental Agency). This regards permits database (facilities handling with waste) and waste production and handling data base in which the inspectorate can search for suitable facilities or waste producers to inspect. The tools allow focusing on and following up on waste streams from production to final treatment. However the statistical office will be probably responsible for data collecting and management in the future, and there are concerns that suitable and accurate data not only for planning of regional waste management but also for planning and carrying out inspections will be delivered in same quality.</p> <p>The inspectors of the Czech Environmental Inspectorate perform thousands of inspections of facilities dealing with waste per every year. Yes. An annual plan exists, which represent 40 % of inspector hours. The plan is divided into seven separate issues of inspections in order to cover whole area of legislation. The Department of Waste Management inspects waste treatment facilities including recovery and disposal, waste collection, take back systems (WEEE, waste batteries, waste tyres, waste oils, packaging), waste generators (producers), waste shipments and chemical legislation obligations. In general legal persons and facilities, which had already some compliance problems in the past or where potential risk exists (e.g. according to databases, customs etc.) and facilities or waste generators that have not been inspected before are inspected. When inspectors find the breach of duties they are obligated to impose a fine and in some specific cases also can stipulate measures and deadlines for ensuring a remedy. In 2011 the Waste Management Department of the Czech Environmental Inspectorate performed 2,891 inspections, in 869 cases imposed the total fine of more than 48,000,000 CZK (~ 1.9 Mio €; which is 2,220 average per fine) and stipulated 9 measures for ensuring a remedy. The most frequent breach/infringement was operating facility for recovery, disposal, collection or purchase of waste in discrepancy with the approved rules of operation (e.g. wrong classifying waste according the types and categories, no safeguard waste against undesirable devaluation or theft or escape, no records of waste</p>



	<p>and the manner of its management, breaking allowed capacity.) [CZ CEI 2012]</p> <p>Also cooperation between the MoE and the German Association on waste management is in place in particular to learn on experience how to involve the many municipalities [CZ MoE 2012d].</p>
<p><i>Informative instruments</i></p>	<p><b>Networks</b> [RETech 2009]:</p> <ul style="list-style-type: none"> <li>– Regional competence centres on waste exist (CEHO, )</li> <li>– Network for biomass use (CZ BIOM, <a href="http://biom.cz">http://biom.cz</a>)</li> <li>– Czech Waste Association (Česká asociace odpadového hospodářství-ČAOH)</li> <li>– Waste initiatives from cities and city-land-alliances (e.g. SMaO Vltava)</li> <li>– Citizen action comities</li> <li>– <a href="http://www.smocr.cz/">http://www.smocr.cz/</a> "Union of Towns and Municipalities of the Czech Republic also dealing with waste issues e.g. developing a “Strategy of Development of Waste Handling/Treatment in Municipalities” in 2008 [CZ CEI 2012]</li> </ul> <p><b>Information campaigns on packaging waste</b> [EC 2012c] [EEA 2011]:</p> <ul style="list-style-type: none"> <li>– TV and press advertising campaigns have been run, along with leaflets and posters (including at collection points) to explain the role of the consumer in the process of <b>packaging waste recovery</b>; this was followed by a TV campaign to promote household waste sorting.</li> <li>– In the Czech Republic, public funding is available for projects which <b>increase the material recovery</b> of waste in particular through the Infrastructure Operational Programme 2007–2013.</li> <li>– The Ministry of the Environment developed in cooperation with the CENIA, the Czech Environmental Information Agency, an educational toolkit on sustainable consumption and production for elementary and secondary school children - Don't Buy It! (<a href="http://www.mzp.cz/en/do_not_buy_it">http://www.mzp.cz/en/do_not_buy_it</a>). The main aim of the toolkit is to present practical implications of sustainable consumption.</li> <li>– There is visible activity on informational and education level from take back system in Czech Republic.</li> <li>– Elektrowin Inc. prepares competitions and educational programmes for schools in different towns. Eko-Kom Inc. has run a massive information campaign since 2003 to encourage inhabitants in <b>sorting waste</b>. There is also cooperation of take back systems focused to WEEE, packaging and batteries (ASEKOL Inc., Ekolamp Inc. , Ecobat Inc. and EkoKom Ltd.) on educational program for schools Recyklohraní (<a href="http://www.recyklohrani.cz/">http://www.recyklohrani.cz/</a>) in Czech Republic.</li> <li>– Both, the State Environmental Policy 2004–2010 and the national WMP <b>promote material recovery</b> of waste. Further, the Ministry of Environment (<a href="http://www.env.cz">www.env.cz</a>) is transparently publishing official information on Act of Packaging. A direct support for products made of recycled materials has not yet been implemented.</li> <li>– Further industry organisation promotes the <b>instruments related to the waste prevention</b>; authorised packaging company EKO-KOM a.s. (<a href="http://www.ekokom.cz">www.ekokom.cz</a>), inform its clients on waste prevention methods via information published on the website as well as during workshops or consultation.</li> </ul> <p><b>Further instruments:</b> According to [CZ MoE 2012b] the following instruments are also applied:</p> <ul style="list-style-type: none"> <li>– Eco-labelling scheme;</li> <li>– Eco shopping guide/information, provided on voluntary basis by shops</li> <li>– Information campaigns addressing certain target groups (e.g. households by EKO-KOM, the public, businesses, schools, tourists, industry etc.),</li> <li>– Certification of businesses; according to ISO accreditation by the Czech Institute for Accreditation.</li> <li>– Awarding; including various areas, also waste issues</li> <li>– Activities from regional offices</li> </ul>

Municipal waste generation [EUROSTAT 2012b]	MS	EU 27
Total amount of MW generated (in kt)	3,334 5,362 [CZ MoE 2012c]	252,095
Total amount of MW generated per capita (in kg)	317 510 [CZ MoE 2012c]	502
Collection infrastructure (municipal waste including bio-waste and packaging waste) [EUROSTAT 2010]		
Collection coverage for MW (in %)	100	96.6

**Collection of municipal waste:** Municipal waste in Czech legislation and WMP is defined as “any waste arising in the territory of the municipalities in the activities of natural persons. Municipal waste includes mixed municipal waste, separately collected fractions (paper, plastic, glass, and beverage cartons), hazardous waste, bulky waste, waste from gardens and parks, etc.” [[http://www.mzp.cz/cz/komunalni\\_odpady](http://www.mzp.cz/cz/komunalni_odpady)]. 16.9 % of all wastes are regarded as municipal waste; 49.2 % is C & D waste [CZ MoE 2012b]. The fraction of mixed municipal waste (MMW) accounts for 3,143 kt in the year 2010 (299 kg per capita)[CZ MoE 2012c]. Municipalities usually offer a collection system for the collection of mixed municipal waste with door-to-door collection. Communal tender procedure for the collection of municipal waste is required; in large cities often preference for municipal owned companies. In many cases mingled collection of all wastes is performed, in some cases mingled with industrial waste. Collection nationwide household-related solid waste collection, often collective container usage therefore often still mixed with industrial waste. According to [Ernst & Young 2011] 16 % of the total municipal waste was collected selectively including glass, paper, plastic, batteries, WEEE and expired drugs. The system operates in 15 cities and smaller towns (in August 2011).

Further the infrastructure of civic amenity site is well developed and the citizens can deliver more or less all wastes without any additional waste fee (fee is covered by annual waste fee) [CZ CEI 2012].

Private waste management industry is increasing (private market share > 60 %), there exists some joint ventures/public private partnership (PPP), involvement of foreign companies (by associated companies) like Becker, Remondis, Rethmann, SITA, A.V.E., A.S.A. (currently market leader) [RETech 2009].

**Separate collection of bio-waste:** The separate collection of bio-waste is one priority in the new waste law and collection of bio-waste from households is expanding. There are hundreds of municipalities providing separate collection of bio-waste; but separation rate of bio-waste is not investigated [CZ FoE 2012]. However, collection is not sufficiently popular amongst inhabitants [RETech 2009]. From 2014 on municipalities are obliged by law to introduce separate collection of compostable municipal waste [CZ MoE 2012b]. Details on this obligation and the precise requirements of the new legislation are not known yet [CZ FoE 2012].

**Separate collection of packaging waste:** Collection of packaging waste is mostly operated by private companies [RETech 2009]. For the return and recovery of packaging waste authorised packaging companies are obliged to provide services under uniform conditions to all economic operators placing packaging on the market regardless if goods are domestic or imported. In addition, a number of waste management companies offer waste recovery services on a normal commercial basis. Currently, there is one authorised packaging company (EKO-KOM a.s.), [EC 2012c]. 14,758 companies participated in the activities of the authorised companies in 2002 [CZ WMP 2003-2013]. The operators are motivated to reduce packaging waste or to develop more cost efficient solutions for the collection and recovery [EC 2012c]. For most of the packaging wastes, container solutions (bring-systems) are provided in particular glass, paper, metal and plastic is collected separately [RETech 2009]. Metal packaging waste is according to [CZ EKOKOM 2012] a smaller waste stream mostly limited to packaging from paints and household chemicals, which requires a special treatment, while for example consumption of beverage cans is below 10 items per capita per year, (less than 250 g/capita/year). Metal packaging is collected in yards or through magnetic separation from mixed waste. 90 % of the Czech population was involved in the separate collection system in 2002 [CZ WMP 2003-2013] [CZ FoE 2012], according to [CZ EKOKOM 2012] it is even 99 %. As the walking distance to containers has been reduced (being average of 100 m walking distance [CZ EKOKOM 2012] and the number of containers has increased the total amount of separately collected and recycled packaging waste has grown significantly. Thus bring system is performing at a more or less same level than door-to-door collection [CZ EKOKOM 2012]. In 2009 460 kt/year of waste was collected selectively, which accounts for 16 % of the total waste collection (this number includes glass, paper, plastic, but also batteries, WEEE and expired drugs). The selective waste collection system operates on a large scale in almost all towns and villages. Only about 300 smaller villages do neither have bring nor kerbside systems [CZ EKOKOM 2012]. At the same time, the yield of sorted waste also increased rapidly (by 570 %) which meant that by 2008, every Czech citizen was sorting 53.1 kg of waste per year [EEA 2010]. According to [CZ EKOKOM 2012] that selective collection of paper from municipal waste is not so successful. It is also a common practice to use paper waste as fuel for household heating.

**Treatment infrastructure for municipal waste [EC 2012b]**

Self-sufficiency for disposal of total waste (in %)		100 (2009)
<b>Treatment rates [EUROSTAT 2012b]</b>		<b>MS</b> <b>EU 27</b>
Recycling rates of municipal waste (in %)	14.2 24.3 [CZ MoE 2012c]	24.9
Composting rates of municipal waste (in %)	2.4 12 [CZ MoE 2012c] (24 % of biodegradable municipal waste – 12% of total municipal waste generated)	14.7
Recovery rates of municipal waste including incineration with energy recovery (in %)	15.5 8.9 [CZ MoE 2012c]	17.2
Incineration rates of municipal waste (incineration without energy recovery) (in %)	0.04 [CZ MoE 2012c]	-
Disposal rates of municipal waste (in %)	67.9 59.5 [CZ MoE 2012c]	38.2

**Information on treatment facilities, compliance/BAT and capacity**

Pre-treatment facilities for municipal waste	<p><b>Separation facilities [RETech 2009]:</b> The number of facilities for separation/segregation of municipal waste has increased rapidly during the last years. Currently 116 sorting units/lines were included in the Czech Waste Management Information System [CZ MoE 2012d]. These facilities usually include separation tables where waste is placed on a moving conveyor belt and where the employees separate it by hand [CZ WMP 2003-2013]. Facilities were established using in particular private companies/investments. However, further capacity is required.</p>
Recycling facilities	<p><b>Recycling of bio-waste [RETech 2009]:</b> The treatment of bio-waste is one of the major future issues for CZ. In 2012, 239 composting plants, 52 community composting facilities, 326 biogas power plant stations as well as 10 biogas waste stations existed [CZ MoE 2012d]. However, this capacity is not sufficient and other capacities are necessary to reach diversion targets for 2020. The landfill diversion target for 2010 was 1,147,500 t. The final amount of corresponding biodegradable waste landfilled in 2010 was 999,047 t [CZ MoE 2012]. Home-composting activity and promotion is not developed in rural areas causing some problems with illegal dumping of green (garden) and other bio-wastes [CZ CEI 2012].</p> <p><b>Recycling of packaging waste:</b> Most of the sorted municipal waste is being recycled (glass, plastics, paper), [EEA 2010], with paper (93 %), followed by glass (71 %), metals (52 %) and plastics (52 %). However according to [CZ EKOKOM 2012] the recycling rate of household paper packaging is much lower, even below rate of plastic based on insufficient selective collection of paper from municipal waste and the practice of household heating of paper waste. During the reference period 1999 – 2008, the total amount of packaging waste recycled has increased 29-fold [EEA 2010]. All targets for 2012 are over-achieved already in 2010 [Ernst &amp; Young 2011]. Regarding the recycling rates [CZ FoE 2012] comments that data basis for the calculation of packaging waste is base on the registered production of packaging waste, but that actual production is higher leading to the situation that recycling ratio in some countries is higher than 100 % and treatment of paper packaging waste sums up to 130 %. In consequence real recycling rates are probably lower.</p> <p>According to [CZ MoE 2012d] 3 glass treatment units, 2 glassworks which accept waste, 20 paper mills accepting paper and cardboard waste, 5 facilities for mixed plastic waste and 2 for the treatment of tetrapack exists in 2012.</p> <p>Despite an encouraging increase in recycling/composting rates, it is unlikely to meet the recycling target of 50 % by 2020 without substantial investment [EC 2012f]. Further EC recommendation on</p>

	recourse efficiency proposes for CZ to further apply a system for minimizing, sorting and subsequently using waste for material recovery (reducing the consumption of primary sources through the promotion of products from recycled materials) [EEA 2011].
<i>Incinerators with energy recovery</i>	3 incinerators of municipal waste are operated in the Czech Republic, having a capacity of 400 kt/year (in 2009), [CZ WMP 2003-2013]; [EC 2012]. According to [CZ MoE 2012], the capacity is 654 kt/year, however, plants did not operate at full capacity. The incinerators are located in Prague (Malešice, Praha, municipal owned), Liberec (Termizo Liberec, private (MVV Energie AS) and Brno (SAK, private), [RETech 2009]. The incineration capacity is insufficient; Czech Republic need additional capacity for treatment of mixed waste. Also a study from the University of Brno calculates that the total capacity needed for CZ is 1,500 kt/year to meet the EU requirements (given that waste generation remains constant) [Ernst & Young 2011]. In addition, 5 co-incinerators (cement kilns) with a capacity of 178 t/year are in operation (note: not for treatment of household waste) and 28 incinerator for the treatment of hazardous waste are in place [CZ MoE 2012d].
<i>Incinerators without energy recovery</i>	n/a
<i>Landfills for non-hazardous waste</i>	Currently 148 landfills for non-hazardous waste, 26 for hazardous waste/combined as well as 31 for inert waste exist. All of them are compliant with the Landfill Directive [CZ MoE 2012b]. The number of landfills has been decreasing since 1991. A rapid decrease in the number of landfills occurred in 1996, when approx. 1,000 landfills operated pursuant to special regulations ceased their activities [CZ WMP 2003-2013]. Landfilling of waste remains the most frequent manner of waste disposal. The overall capacity of landfills, both for municipal waste and for other types of waste, including hazardous waste, is sufficient for the near future [CZ WMP 2003-2013]; [BiPRO 2012b]. Most of the mixed municipal waste is still landfilled [EEA 2010]. In 2010, 62 landfills for non-hazardous waste were owned by municipalities, private companies in particular run hazardous waste landfills [RETech 2009]. Regarding [CZ MoE 2012d] capacity for landfilling is sufficient until 2050.

Map with all major installations

Landfills for non-hazardous waste



Incineration facilities (red dot for municipal waste, black dot for hazardous waste)





#### Infringement procedures and court cases related to WFD and Landfill Directive

Number of infringement procedures and cases brought to the CJEU

Number of procedures: 1 / Number of court cases: 0 [BiPRO 2012b]  
The infringement procedure was opened on the Landfill Directive (1999/31). However the case was not brought to court.

#### Fulfilment of targets related to biodegradable waste going to landfills

Fulfilment of target of the Landfill Directive on biodegradable waste going to landfills

98.2 % [EC 2012a]  
It is unclear whether CZ has met the first (2010) landfill diversion target. Ongoing verification of the compliance of the target is being carried out by the EC [EC 2012f].

#### Statistics on packaging waste [EUROSTAT 2012d]

	Plastic packaging waste		Paper packaging waste		Metal packaging waste		Glass packaging waste		Total packaging waste	
	MS	EU	MS	EU	MS	EU	MS	EU	MS	EU
Total amount generated (in kt)	209	14,590	338	29,783	46	4,544	188	16,006	894	76,593
Total amount generated per capita (in kg)	19.9	29.2	32.2	59.5	4.3	9.1	17.9	32	85.3	153.1
Share of total packaging waste (in %)	23.3	19	37.8	38.9	5.1	5.9	21.0	20.9	100	100
Recycling rates (in %)	52.5	32.2	93.9	83.4	52	69.5	71.2	67.6	68.8	62.5
Recovery rates including incineration with energy recovery (in %)	71.0	59.7	98.9	90.7	52	69.9	71.2	67.6	75.8	51.1
Disposal rates (in %)	29.0	40.3	1.1	9.3	48	30.1	28.8	32.4	24.2	25.4
<b>Fulfilment of target of the Packaging Directive on recycling [EC 2012c]</b>	<b>yes</b>	<b>n/a</b>	<b>yes</b>	<b>n/a</b>	<b>yes</b>	<b>n/a</b>	<b>yes</b>	<b>n/a</b>	<b>yes</b>	<b>n/a</b>

<i>Next steps planned by CA</i>	Measures planned	Implementation likely?
<i>Collection</i>	<ul style="list-style-type: none"> <li>– Introduce <b>legal obligation</b> to municipalities to <b>separately collect bio-waste</b> [CZ FoE 2012]</li> </ul>	<p>YES in 2015, legislative process is ongoing [CZ MoE 2012]</p> <p>NOT FOR SURE as details and schedule for enforcement are not clear/not communicated [CZ FoE 2012]</p>
<i>Treatment</i>	<ul style="list-style-type: none"> <li>– Gradually increase of the <b>landfill tax</b> (probable doubled in 2016 / tripled in 2020), [CZ MoE 2012]; however exact conditions yet have to be agreed on and communicated [CZ FoE 2012]</li> </ul>	<p>YES [CZ MoE 2012]</p> <p>NOT FOR SURE as planning for landfill tax has changed a lot over the past six years and schedule for enforcement yet not agreed on / transformed in legal obligation and not communicated to stakeholders [CZ FoE 2012]</p>
	<ul style="list-style-type: none"> <li>– <b>Extend restrictions/ban</b> for biodegradable waste to be disposed of in landfills</li> </ul>	<p>UNDER CONSIDERATION [CZ MoE 2012]</p> <p>NOT FOR SURE as details are not agreed on [CZ FoE 2012]</p>
	<ul style="list-style-type: none"> <li>– Built at least one new incineration plant for the treatment of municipal waste</li> </ul>	<p>YES, but depended on EU funding</p>
	<ul style="list-style-type: none"> <li>– Adaptation of the national strategy to reduce <b>biodegradable waste</b> in terms of support for sorting of biodegradable then support for sales of the product of biodegradable waste treatment facilities [EC 2012e]</li> </ul>	<p>n.a.</p>
<i>Data base</i>	<ul style="list-style-type: none"> <li>– Harmonisation of statistical data (EUROSTAT and national data) and calculation methods, produce one data collection method/one data stream</li> </ul>	<p>YES [CZ MoE 2012]</p>
<i>Legal</i>	<ul style="list-style-type: none"> <li>– National waste management plan covering the next period (2013-2023)</li> <li>– New Act on Waste</li> <li>– new ACTs on TAKE-BACKs (ELVs, WEEEs, tyres, batteries and accumulators)</li> </ul>	<p>YES [CZ MoE 2012d]</p>



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<sup>1</sup> Searchable at: <http://www.eea.europa.eu/soer/countries>

<sup>2</sup> Searchable at

<http://www.eea.europa.eu/soer/countries#c11=CommonalityReport&c11=DiversityReport&c11=FlexibilityReport&c12=all&c5=waste&start=0>