

Municipal waste management



Sweden 

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Context

This country profile was prepared within the EEA's work on municipal waste, resulting in the following outcomes:

- [32 country profiles](#) (this document) – The country profiles were originally produced by the ETC/SCP and were published by the EEA in 2013. The ETC/WMGE updated them for the EEA under its 2015 and 2016 work programme.
- [An EEA briefing on Municipal waste management across European countries](#)

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Highlights

- The overall treatment of municipal solid waste (MSW) in Sweden is characterised by an equal share of recycling and incineration, more than 49 % each, while landfilling has been diminished to around 0.6 % of generated MSW in 2014.
- Recycling rates were already high in 2001 at 39 % and by 2014 it had reached almost 50 %. Sweden will most likely be able to fulfil the 2020 50 % target set out in the Waste Framework Directive.
- A landfill tax, which came into force on 1 January 2000, played a vital role in the diversion of MSW from landfill to recycling and incineration. Consecutive increases in the tax level in 2002, 2003 and finally in 2006 instigated a continuous reduction of landfilling MSW.
- In addition to the landfill tax, other instruments such as producer responsibility, milestone targets for food waste recycling and investments in anaerobic digestion have been particularly important in improving recycling rates.
- A landfill ban on sorted combustible waste in 2002 and a landfill ban on organic waste in 2005 were catalysts for the diversion of MSW from landfills.
- Since 2012 Sweden has two milestone targets for waste, including a target of better resource management in the food chain and recycling target for construction and demolition waste.
- A tax on incineration was introduced in 2006 in order to boost further material and organic recycling, but was repealed in 2010.

1 Introduction

1.1 Objective

Based on historical municipal solid waste (MSW) data for Sweden, and EU targets linked to MSW in the Waste Framework Directive (WFD), the Landfill Directive and the Packaging Directive, the analysis undertaken includes:

- the historical MSW management performance based on a set of indicators;
- uncertainties that might explain differences in country performance, which may relate more to variations in reporting methodology than to management performance;
- indicators relating to the country's most important initiatives for improving MSW management; and
- possible future trends.

2 Sweden's municipal solid waste management performance

Historically, Sweden has shown strong commitment to environmental protection initiatives and policies, particularly in the area of waste. Already by 1969, the Environment Protection Act imposed far-reaching environmental obligations on new waste treatment facilities. Several regulations came into force during the 1990s, including the increasing importance of producer responsibility and a concentrated effort on measures to reduce landfilling of waste. The Environmental Code of 1999, replacing the previous Environment Protection Act, integrated 15 previously existing environmental laws and formed umbrella legislation governing all environmental impacts within the framework of a sound sustainable development for Sweden. Waste management is particularly regulated by the Waste Ordinance of 2011 together with a number of specific ordinances covering different waste streams and extended producer responsibility (BiPRO and CRI, 2015).

Swedish MSW management is governed by the principle of waste minimisation as a top priority in accordance to the waste hierarchy found in the Waste Framework Directive (2008/98/EC). In 2005, Sweden's Waste Plan, *A Strategy for Sustainable Waste Management*, laid down the future direction of waste management, based on the Swedish Environmental Objectives, which were enacted by the government in the same year (SEPA, 2005). The current National Waste Management Plan (NWMP) was adopted in 2012 and is valid until 2017 (BiPRO and CRI, 2015).

Swedish MSW management is characterised by a clear division of responsibilities for all involved actors. Municipalities bear the responsibility of collecting and disposing household waste, except for product categories covered by producer responsibility. Municipalities also have the right to choose how to organise waste management within their territory. In 2014, private contractors carried out waste collection in 71 % of municipalities whereas in 25 %, the municipalities carried out collection themselves. In the rest, a combination of private contractors and municipal collection services were used. Waste treatment is either undertaken by the municipality/municipal enterprise itself, or by an external contractor, which may be another municipality, municipal enterprise or private company. (Avfall Sverige, 2015).

Since 1991, municipalities are obliged to establish a waste management plan to reduce the amount and hazardousness of waste, based on national environmental objectives and strategies (BiPRO and CRI, 2015). The plans are coordinated by the County Administrative Board, which then analyses the

waste treatment capacity and ensures there is sufficient treatment capacity within the region (ETC/SCP, 2009). Municipalities may issue local regulations on household waste management, including fees (ETC/SCP, 2009). Overall, municipal autonomy is extensive and the municipalities may choose to develop waste management in different ways. Households are responsible for separating and depositing waste at the various available collection points maintained by the municipalities. Households are also responsible for complying with municipal waste management regulations. Lastly, producers are obliged to take care of waste arising from their products (Avfall Sverige, 2011). In Sweden, producer responsibility has been established for end-of-life packaging, cars, tyres, paper, batteries and electrical and electronic products (SEPA, 2005).

The formal collection system caters for all households in Sweden. Mixed municipal (residual) waste is collected by a door-to-door system and part of the population is also serviced by door-to-door collections of some waste types separated at source. The waste types included in door-to-door collections and the organisation of services varies greatly. Some examples of door-to-door collection of source separated waste include multi-compartment bins for up to 8 different waste types, colour coded bags which are optically separated in dedicated plants and a two-bin system for the separation of bio-waste only. In addition, all households have free-of-charge access to collection points for waste covered by the producer responsibility schemes – newsprint, paper packaging, glass, plastic and metal. There are approximately 5 800 such collection points in Sweden and the collection services are complemented by 630 civic amenity sites operated by municipalities. A deposit-refund system is in place for polyethylene terephthalate (PET) and glass bottles, and aluminium cans. All municipal waste for recycling is collected as source separated. (Gibbs *et al.*, 2014a)

The municipal waste services, both door-to-door collections and civic amenity sites, are funded by the fees billed by municipalities. Generally, waste collection fees cover the total cost of municipal waste management but deficits may be funded through taxation. The fee is typically composed of a fixed and a variable fee. Several municipalities, 30 in 2014 have introduced weight-based charges under which households pay an additional fee per kilogram of waste collected, in addition to the basic fee. In some municipalities the fee for food waste collection is lower than for residual waste, or zero. Collection of waste types covered by producer responsibility schemes is funded by a weight-based fee or an equivalent. For example for packaging waste there are a packaging fees that producers pay for the collection, and is typically passed on to consumers through the purchase price. (Naturvårdsverket, 2016; Avfall Sverige, 2015; Gibbs *et al.*, 2014a)

Commercial waste similar to household waste is collected in the same manner as household waste. The fee paid by businesses depends on the collection frequency and the bin size (Gibbs *et al.*, 2014a).

Digestion or composting of food waste takes place in 170 out of 290 Swedish municipalities. The main treatment method for mixed municipal waste is incineration. There are 33 incineration plants for household waste in Sweden, producing 16.6 terawatt-hours of energy in 2014, mainly for district heating. Even though incineration capacity already exceeds the domestic availability of combustible waste, the number of plants is expected to grow. In 2014, 1.4 million tonnes of waste were imported for energy recovery, primarily from Ireland, Norway and the United Kingdom. There are 45 active municipal landfill sites in Sweden (Avfall Sverige, 2015), but the share of waste landfilled is very low.

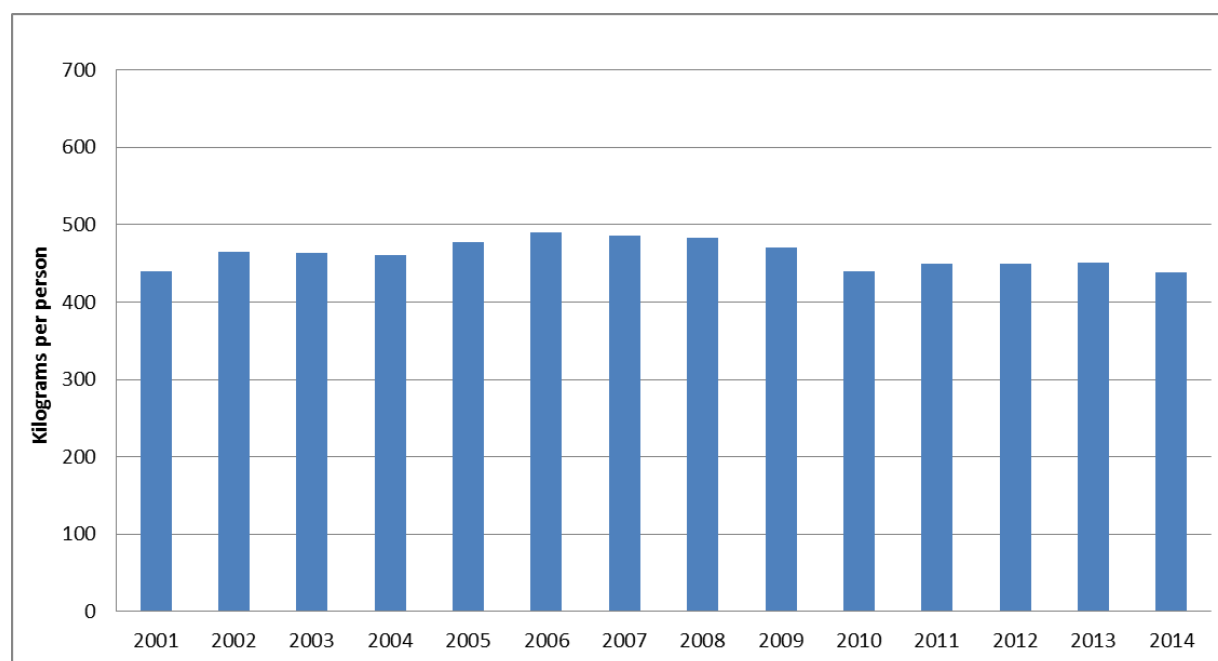
The generation of MSW in Sweden peaked in 2008, reaching 4.46 million tonnes. In the following years the generation fell, to 4.27 million tonnes in 2011 and further to 4.25 million tonnes in 2014. It has been argued that one possible explanation for the reduction is the economic recession, as reduced consumption inevitably leads to reduced waste (Avfall Sverige, 2009). The amounts of generated and treated MSW reported to Eurostat have been equal since 2001 (Eurostat, 2016).

2.1 Municipal solid waste indicators

The following indicators illustrate the development of Swedish MSW generation and management in 2001–2014. All percentage figures have been calculated as proportions of generated waste, rather than managed waste, although both are the same for Sweden.

Figure 2.0 shows the development of MSW generation per person in Sweden from 2001 to 2014. There was a slow but gradual increase between 2001 and 2006, when MSW generation peaked at 490 kilograms per person. From 2007 onwards, MSW generation decreased, dropping to 438 kilograms per person in 2014. As discussed, a possible explanation for this decrease might be the economic recession.

Figure 2.0 Sweden, municipal solid waste generation per person, 2001-2014



Source: Eurostat, 2016.

The preferred waste management options in Sweden are incineration and recycling. Quantities of MSW have been almost equally divided between these two waste treatment paths, with a slight preference to incineration – only in 2006 and 2009 was the share of recycling of MSW marginally higher than the share of incineration (Eurostat, 2016). Sweden has drastically reduced the amount of waste going to landfill from around 22 % of MSW in 2001 to 0.6 % in 2014, which translates into only 27 000 tonnes ending up in landfill in 2014 compared to 880 000 tonnes in 2001.

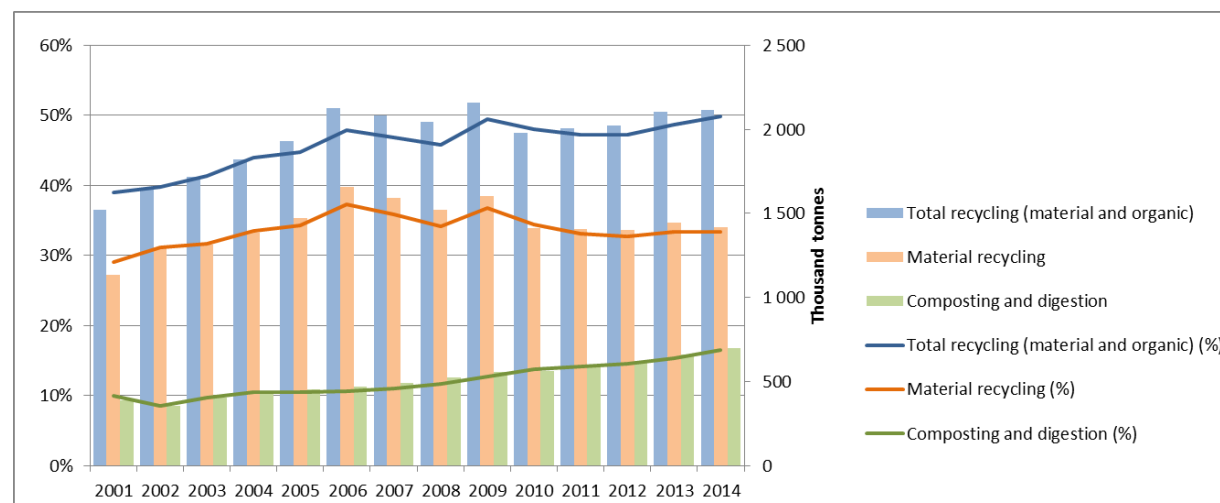
2.1.1 Municipal solid waste recycling from 2001 to 2014

Figure 2.1 shows the development of recycling of MSW in Sweden – total recycling, material recycling and composting and other biological treatment.

Figure 2.1 shows that total recycling of MSW in Sweden was already high in 2001, at around 39 % of generated MSW. Since then, it has slowly increased, reaching 50 % in 2014. Material recycling rates have been particularly high due to efforts made in the previous years, when well organised and operational producer responsibility schemes for different products were established. Although recycling in total is increasing steadily, material recycling shows a slight decrease from 2009 onwards. The growth of the MSW recycling rate is mainly due to organic recycling, which has been

increasing steadily since 2002. Still, however, organic recycling remains relatively low compared to material recycling, but waste quantities with organic content are also diverted to incineration, which competes directly with composting and other biological treatment.

Figure 2.1 Sweden, recycling of municipal solid waste, 2001–2014, per cent and tonnes



Source: Eurostat, 2016.

Table 2.1 shows the composition of material recycling in Sweden, as reported by various producer responsibility schemes for the years 2010–2014, next to the total amount of biologically treated waste. Biowaste is the largest fraction, followed by packaging and paper wastes.

Table 2.1 Sweden, composition of collected household waste for recycling, 2010–2014, '000 tonnes

	2010	2011	2012	2013	2014
Paper	386	384	358	333	314
Packaging (cardboard, metal, plastic and glass)	705	682	619	649	673
Electrical waste including cooling units	149	154	148	146	149
Portable batteries	2.75	3.2	3.46	3.12	3.1
Car batteries	7	6.78	6.45	6.85	6.59
Oil waste	1.8	1.82	1.69	1.74	1.84
Water-based paint	3.75	4.1	4.01	4.21	4.14
Scrap metal	159	165	153	153	156
Plaster	-	18.1	17.5	22.4	23
Flat glass	-	1.63	1.25	1.4	1.59
Plastic, non-packaging	-	5.4	4.01	4.17	3.35
Corrugated board from recycling centres	-	-	36.3	43.4	44.1
Textile waste	-	-	-	-	2.32
Construction materials	-	-	-	-	175.2
Other materials for recycling	-	-	69.9	99.2	61

Total	1414	1426	1423	1467	1618
Total biological treatment of household waste	623	653	673	711	748
TOTAL recycling	2037	2079	2096	2178	2366

Source: Avfall Sverige, 2015

Note: Figures may not sum to total due to rounding

The EU's 2008 WFD includes a target for certain fractions of MSW: 'by 2020, the preparing for reuse and the recycling of waste materials such as at least paper, metal, plastic and glass from households and possibly from other origins as far as these waste streams are similar to waste from households shall be increased to a minimum of overall 50 % by weight'. EU Member States may choose between four different methodologies to calculate compliance with the target¹. Sweden has chosen calculation method 2 (Gibbs *et al.*, 2014). The recycling rates shown in this paper correspond to method 4, the only method for which time series data exist. According to Eurostat data, Sweden has already achieved the target using method 4 (Figure 2.1).

In 2015, the European Commission proposed new targets for municipal waste of 60 % recycling and preparing for reuse by 2025 and 65 % by 2030, based on only one calculation method, and with the option of time derogations for some countries (EC, 2015).

2.1.2 Landfill of biodegradable municipal waste

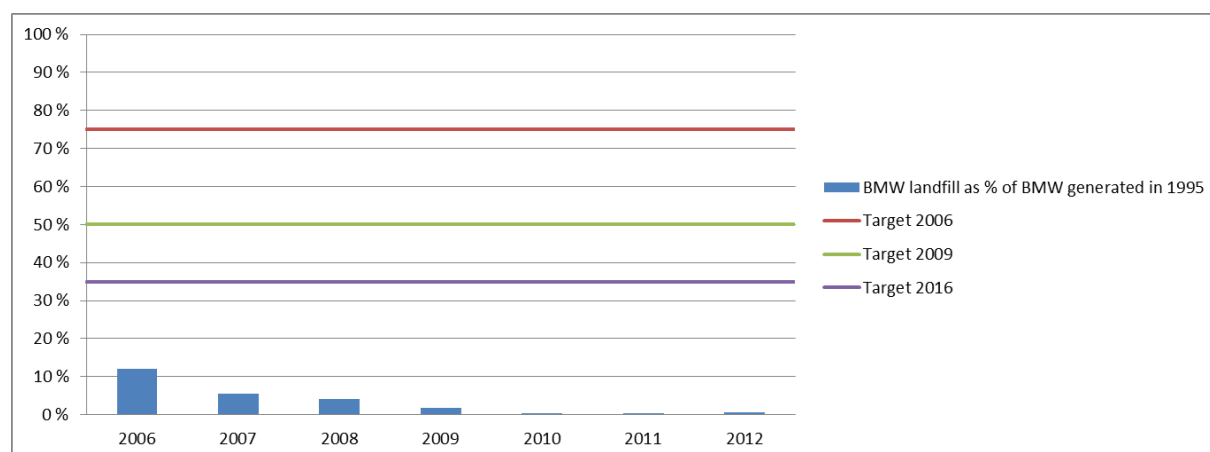
According to the EU Landfill Directive, Member States have to reduce the amount of biodegradable municipal waste landfilled (BMW) to specific percentages by 2006, 2009 and 2016. The targets are related to the amount of BMW generated in 1995, 2 540 000 tonnes of BMW in the case of Sweden.

Sweden has reported the landfilled amount of BMW to the Commission for the years 2006–2012 (EC, forthcoming; EC, 2012). According to these data (Figure 2.2), the landfilling of BMW is steadily decreasing and in 2012 only 1 % of the amount of BMW generated in 1995 went to landfill. Sweden has already reached all diversion targets of the Landfill Directive and no further effort is required.

¹ Commission Decision 2011/753/EU allows countries to choose between four different calculation methods to report compliance with this target. Member States have the option of considering four alternative waste streams and fractions:

1. paper, metal, plastic and glass household waste;
2. paper, metal, plastic, glass household waste and other single types of household waste or of similar waste from other origins;
3. household waste;
4. municipal waste (the method used in this document).

Figure 2.2 Sweden, landfill of biodegradable municipal waste, 2006–2012



Source: EC, forthcoming; EC, 2012.

In 2001, the Swedish government issued the Waste Ordinance (2001:512) on landfilling which prescribed a set of measures to apply in the following years, banning the landfilling of combustible waste from 2002 and all organic waste from 2005 with only certain exceptions (ETC/SCP, 2009). Therefore, Sweden should have eliminated the landfilling of BMW in 2005 or at least minimised it to the absolute necessary for waste that cannot be otherwise treated. Nevertheless, if a region in Sweden lacks the capacity to appropriately manage the treatment of BMW arisings, the County Administrative Board has the right to grant an exemption from the landfill ban in that specific region (SEPA, 2006).

2.1.3 Regional differences in municipal solid waste recycling, 2001–2013

No regional data for recycling is reported to Eurostat by Sweden.

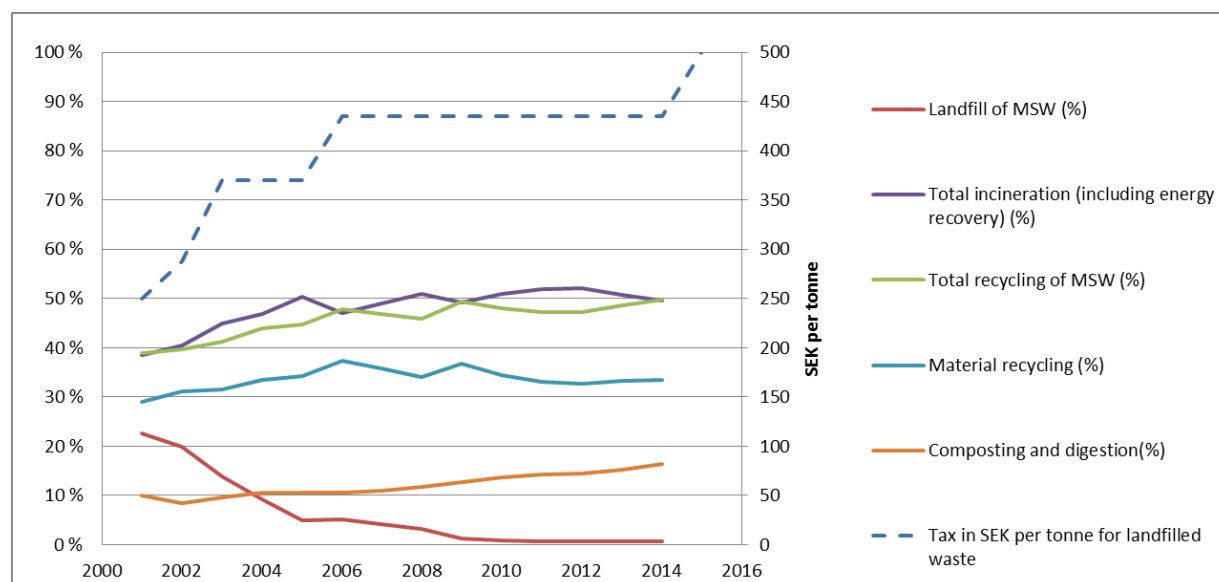
2.1.4 Recycling and landfill taxes

The 1999 Law (1999:673) introduced a landfill tax, which was put into effect in the beginning of 2000, of SEK 250 per tonne of waste landfilled. The level of the tax was increased several times in the following years, finally reaching SEK 435 per tonne (approximately EUR 47.9) in 2006 (SEPA, 2010). As of 2015 the tax rate is 500 SEK per tonne (Skatteverket, 2016). Under the Law, all material entering landfill facilities is taxed, while material removed from the facility qualifies for a deduction. The tax is paid by the owner of the landfill on the basis of weight. If the amount of waste coming into a landfill is of a low quantity, it is possible to decide upon the tax based on other categories (Sweden, 1999). Figure 2.3 shows the development of landfill, incineration and recycling rates in Sweden for the years 2001–2014 together with the landfill tax.

In Figure 2.3 it is obvious that the landfill tax, together with the landfill ban, had a significant impact on the amounts of MSW landfilled and has led to a steady decrease of landfilling from 22 % in 2001 to just 0.6 % in 2013. In this period the tax increased by 74 %. The observed reduction in landfilling cannot be attributed solely to taxation though, because at the same time additional measures were introduced in order to maximise the diversion of MSW from landfill. From 2001, the landfill tax was coupled with a landfill ban on combustible waste and a further increase in the level of the tax in followed in 2002 and again in 2003. Between 2001 and 2004 landfilling dropped more than 13 percentage points of generated MSW. In 2005, a new landfill ban on organic waste was introduced and one year later the landfill tax rose to SEK 435 per tonne. The combined measures were enough to halve the amount of landfilling from the already low level that had been achieved before 2004. Nevertheless, without additional measures in the following years, the level of landfilling decreased modestly until 2008, when it reached 3 % of total MSW. In 2009, all landfill sites not complying with

the requirements of the Ordinance (2001:512) on landfilling were closed down and as a result the number of operating landfills almost halved (SEPA, 2010).

Figure 2.3 Sweden, landfill tax and the development of recycling, landfill and incineration of municipal solid waste, 2001–2015, SEK per tonne



Source: ETC/SCP, 2012; Skatteverket, 2016; Eurostat, 2016.

Note: EUR 1 = SEK 9.03 (2011 annual average currency exchange rate).

The steep rise of the landfill tax in 2003 also influenced recycling rates, both material and organic, showing an increase in the amounts of recycled MSW. The share of material recycling increased by more than 5 percentage points from 2004 to 2007 and organic recycling by 0.5 percentage points. In 2006 a further rise in the landfill tax, coupled with the introduction of the incineration tax (ETC/SCP, 2009), did not seem to have a large impact on the material recycling. Organic recycling continued to grow mainly due to the 2005 landfill ban, together with the milestones target for separation and biological treatment of at least 50 % of food waste. Although there were no new measures in the following years, total recycling remained stable.

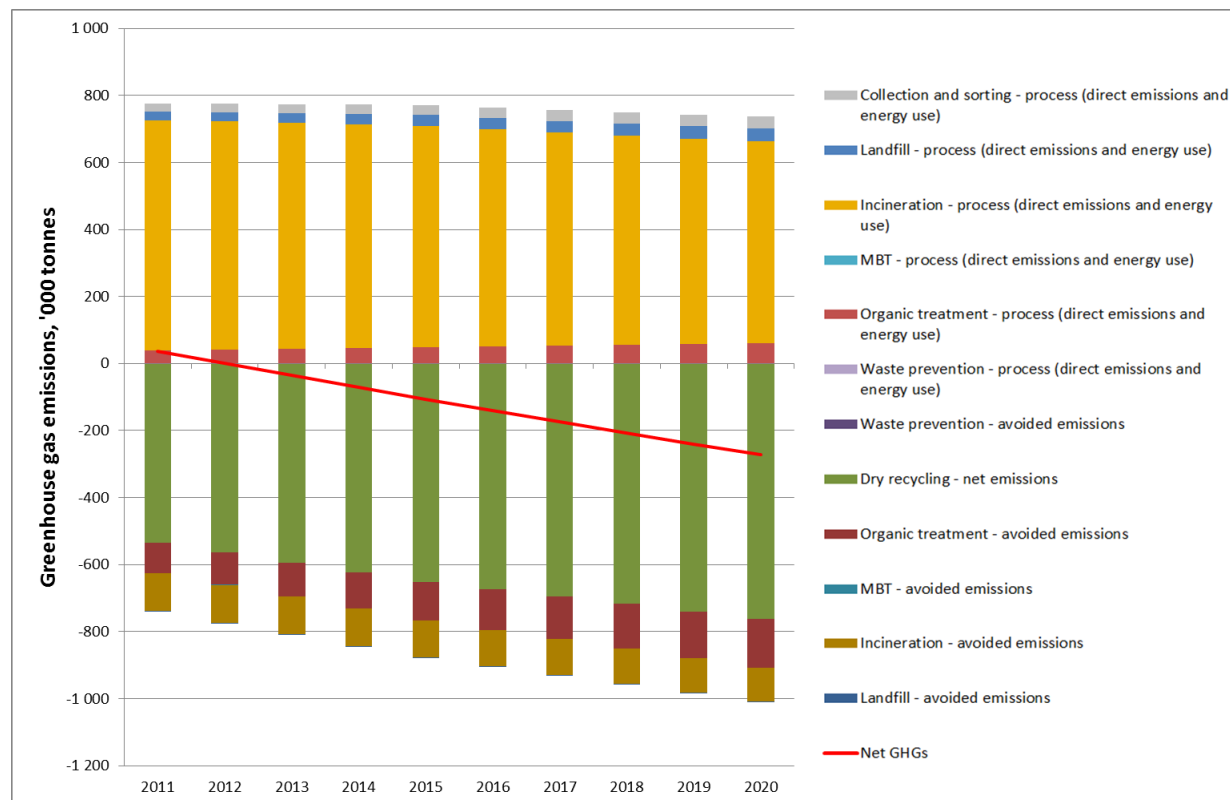
2.1.5 Environmental benefits of better municipal solid waste management

Figure 2.4 shows a scenario for greenhouse gas emissions from MSW management in Sweden. The scenario assumes a yearly growth rate of 2.4 % in municipal waste generation for 2011–2015 and 1.3 % for 2015–2020. The scenario also assumes that EU targets for municipal waste are fully met. The calculation of emissions is based on data and assumptions in the European Reference Model on Municipal Waste Generation and Management. The approach taken in the model is rooted in life-cycle thinking, in that it considers not only direct emissions, but also avoided emissions associated with the recycling of materials, and the generation of energy from waste management processes. The more detailed methodology is described in Gibbs *et al.* (2014b). The level of emissions depends on the amount of waste generated and the treatment it undergoes each year.

Figure 2.4 shows direct emissions, avoided emissions and net emissions resulting from the management of MSW. All the emissions (positive values) represent direct operating emissions for each waste management option. The phases of the waste management chain covered include waste prevention; material recycling; composting and anaerobic digestion; mechanical biological treatment (MBT) and related technologies; collection and sorting; incineration and landfill.

For avoided emissions (negative values), the calculations integrate the benefits associated with energy recovery and material recycling of paper, glass, metals, plastics, textiles and wood, and bio-treatment of food and garden waste from MSW. (Gibbs *et al.*, 2014c)

Figure 2.4 Sweden, scenario for greenhouse gas emissions from municipal solid waste management in Sweden, 2011–2020



Source: ETC/WMGE, calculation based on the European Reference Model on Waste

Note: Results presented in this figure should not be used for the compilation of greenhouse gas reporting for the Intergovernmental Panel on Climate Change (IPCC) national inventory report, or be compared with IPCC figures, as the methodology employed here relies on life-cycle thinking and, by definition, differs substantially from the IPCC methodology.

MBT means mechanical biological treatment.

In countries with a low landfill share and high recycling rate, waste treatment can have an overall positive impact on greenhouse gas emissions, reducing emissions from the economy as a whole. Sweden is one of these countries. Based on the modelled scenario with full policy implementation, net emissions from the treatment of municipal waste in Sweden are negative and expected to decrease further over the period 2011–2020. Throughout the modelled time period direct greenhouse gas emissions related to municipal waste management are very largely from incineration.

2.2 Uncertainties in the reporting

Some uncertainties or differences in how countries report MSW recycling can result in different recycling levels. This applies, for example, to the following issues:

- the extent of packaging waste from households and similar packaging from other sources included or not included in the MSW recycling reported;

- the definition of municipal waste used by the country, such as the inclusion or exclusion of home composting;
- the methodology used to report the inputs and outputs of MBT and sorting plants.

The concept of municipal waste is not defined in Sweden legislation. According to praxis municipal waste is equal to household waste, as defined in the Environmental Code. Household waste is defined as waste generated by households, and similar wastes from business and other enterprises. The governmental bill, introducing the environmental code explained that similar wastes are wastes from industries, enterprises and other business that are generated as a direct consequence of people, no matter of the purpose or activity, are staying within a premise or room (Gibbs *et al.*, 2014a).

Home composting figures are included in the municipal waste generated. In case of composting household waste such as food waste, registration of home composting is required from households and, in case of lacking data, standard values of 180 kilograms per household per year in detached houses and 100 kilograms per household per year in apartment houses can be used for estimation. (SEPA, 2014; Naturvårdsverket, 2016)

Sweden includes packaging waste in its regular reporting to Eurostat on municipal waste. The reporting of waste undergoing sorting processes is based on inputs and thus, the reject fraction is currently not subtracted from the collected amounts. Sweden aims to change this, however, by establishing estimates of the rejects to be used to calculate waste amounts actually recycled. This has already started within the packaging sector. (SEPA, 2014) The uncertainties related to MBT are not relevant for Sweden as MBT is not used in the country.

Regarding municipal waste sent to biological treatment, incineration and landfill, all involved treatment plants report their data in the national database, Avfall Web, administered by the Swedish Waste Management and Recycling Association. All but one of the Swedish municipalities are members in this organisation. Regarding waste aimed for packaging recycling, data are compiled from the Swedish Packaging and Newspaper Collection Service (FTI), complemented with data from municipalities that do not report to the FTI. These data are reported by municipalities in Avfall Web. (SEPA, 2014)

Sweden revised the entire data time series for municipal waste in 2014, causing changes to the previous years' data (SEPA, 2014). Therefore, the figures of the previous edition of this country paper are not fully comparable to the ones presented here.

2.3 Important initiatives for improving municipal waste management

Swedish legislation faced a major challenge in 1998 with the enactment of the Environmental Code and especially Chapter 15 on waste management, formulating explicit rules for all relevant authorities. In 1999, the Law on Waste Tax (1999:673) introduced the landfill tax scheduled to take effect by 1 January 2000 at a rate of SEK 250 per tonne of waste (approximately EUR 27.5).

In 2002, the landfill ban on sorted combustible waste came into effect and three years later it was expanded to all organic waste, with only minor exceptions. Together with several increases in the landfill tax – in 2002, 2003 and 2006 – those measures combined resulted in a greater diversion of waste from landfills. Additionally in 2006, an incineration tax was introduced which increased the diversion of waste to recycling. This trend did not last for long – the incineration tax was repealed by the Swedish government in 2010 (Avfall Sverige, 2011).

In 2005 the Riksdag, the Swedish Parliament, adopted 16 environmental objectives, divided into 72 interim targets. The target was set for municipal waste was to recycle at least 50 % of household waste by 2010 and source separate and biologically treat at least 35 % of household food and similar waste. In the same year the Strategy for Sustainable Waste Management – Sweden's Waste Plan by

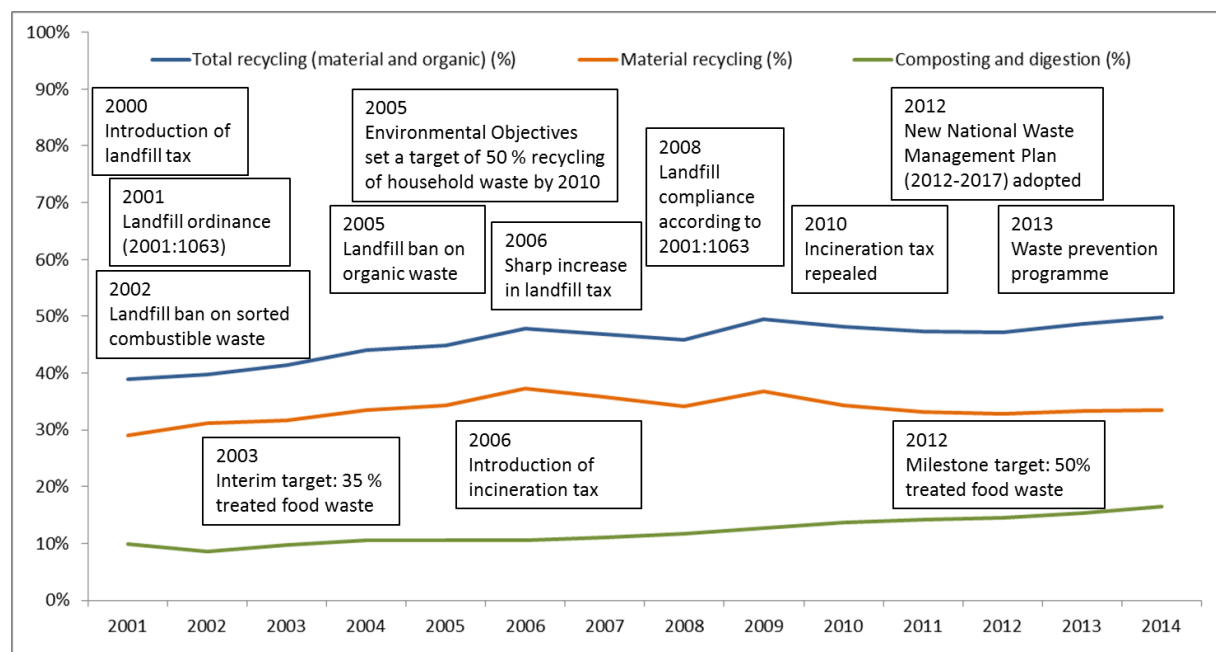
the Swedish Environment Protection Agency was established for the next 5 years (SEPA, 2005). The target of 50 % recycling of household waste was nearly attained.

Over the years, the Riksdag has adopted a number of additional and revised targets. These are replaced on an ongoing basis with milestone targets, which define steps on the way to achieving the environmental quality objectives and the generational goal. Decisions on these milestone targets are taken by the government. (Naturvårdsverket, 2016)

In the next NWMP adopted in 2012, *Från avfallshantering till resurshushållning – Sveriges avfallsplan 2012–2017*, measures are included for promoting further material recycling. The Plan contains five priority areas and a total of 13 targets of which two are the existing milestones targets for food waste and construction and demolition waste. Among other objectives, there are targets to reduce food waste, reduce fires in waste bins, and targets for reuse. Management of food waste became a priority area to be considered in the future and the related milestone target was adjusted so that at least 50 % of food waste from households and other sources should be sorted and biologically treated by 2018. In addition to the targets of the EU Waste Framework Directive, the NWMP defines a national aim that separate waste collection should be made easier for households and that 90 % of them should be satisfied with the separate collection of recyclables. The reuse rate of household waste and textiles as well as the collection of electrical waste for recycling should increase, particularly as regards small items of electrical waste (Naturvårdsverket, 2016; BiPRO and CRI, 2015; Gibbs et al., 2014a; SEPA, 2012) The Swedish waste prevention programme for 2014-2017 was adopted in 2013 (Naturvårdsverket, 2015).

Through the years 1994–1998, several ordinances on producer responsibility for a range of products, including packaging waste, paper and oil, came into force, imposing the physical and economic responsibility for collecting and disposing of certain end-of-life products on producers. These measures were introduced before the EU introduced its producer responsibility requirements. They improved the management of waste and paved the way for the sustainable reuse, recycling or safe disposal of materials (SEPA, 2005). Amendments are expected to the ordinances related to producer responsibility for packaging waste and waste paper in the near future in order to regulate the responsibility of municipalities for the collection of these materials. Under the existing regulation the producers have failed to offer sufficient collection services to citizens and large quantities of these wastes have ended up in mixed municipal (residual) waste and thus the responsibility of municipalities. (BiPRO and CRI, 2015)

Figure 2.5 Sweden, recycling of municipal solid waste and important policy initiatives, 2001–2014



Source: Eurostat, 2016

2.4 Possible future trends

In 2014, MSW recycling had already reached 50 % according to Eurostat data and thus Sweden has already reached the 50 % recycling target for 2020.

In the future it is possible that an obligatory separate collection requirement of food waste for biological recycling will be introduced. Extension of weight based fees for household waste collection is also planned. Increases in kerbside collections of packaging waste and possibly bulky waste are also planned. Changes might also be made to the responsibility for the collection of packaging waste (Section 2.3). Increased separate collection of textiles and plastic waste are planned. Producer responsibility for textiles could be a way of supporting textile recycling. (Gibbs *et al.*, 2014a)

As for waste management facilities, more are planned for preparation for reuse as well as more capacity for incineration. New incineration capacity will operate on imported waste. Also biological treatment capacity, mainly anaerobic digestion, will increase so that the capacity could double between 2013 and 2020. (Gibbs *et al.*, 2014a)

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