

Municipal waste management in Austria



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Context

The Topic Centre has prepared this working paper for the European Environment Agency (EEA) under its 2012 work programme as a contribution to the EEA's work on waste implementation.

Disclaimer

This **ETC/SCP working paper** has been subjected to European Environment Agency (EEA) member country review. Please note that the contents of the working paper do not necessarily reflect the views of the EEA.

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Highlights

Box A1.1 Most important factors and initiatives in Austria

- Austria has increased recycling of MSW to, approximately 63 % of MSW generated¹. This is the highest level in Europe.
- In Austria, the overall performance in terms of MSW recycling has been very stable at a very high level over the last decade in spite of some 7 % growth in generation of MSW over the period of 2001-2010.
- Austria has reduced biodegradable municipal waste landfilled to below 3 % of the generated amounts in 1995 already by 2008.
- Austria has a separate collection policy for biogenic waste all over the country since 1995. In 2008, about 105 kg/capita of biogenic waste were collected separately.
- Biological recycling has been at a high level, reaching approximately 33 % of the generated MSW by 2010.
- Since 1991, all municipal waste incineration plants feature energy recovery for district heating.

¹ Note: According to comments from the Austrian UBA, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category 'compost'. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) are not compost but waste to be landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years in all relevant graphs and figures.

1 Introduction

1.1 Objective

Based on historical MSW data for each country and EU targets linked to MSW in the Waste Framework Directive, the Landfill Directive and the Packaging Directive, the analysis undertaken includes:

- The historical performance on MSW management based on a set of indicators,
- Uncertainties that might explain differences between the countries' performance which are more linked to differences of what the reporting includes than differences in management performance,
- Relation of the indicators to the most important initiatives taken to improve MSW management in the country, and
- Assessment of the future possible trends and achieving of the future EU targets on MSW by 2020.

2 Austria's MSW management performance

According to the Austrian constitution the responsibility for municipal waste management is split between the federal and provincial governments (ETC/SCP, 2009). The Federal Ministry of Agriculture, Forestry, Environment and Water Management is responsible for the required country-wide provisions. The federal government has issued a number of ordinances for specific waste streams as well as waste treatment methods.

The main piece of waste legislation is the 2002 Act on waste management, setting the frame for waste management in Austria complemented by a number of waste ordinances.

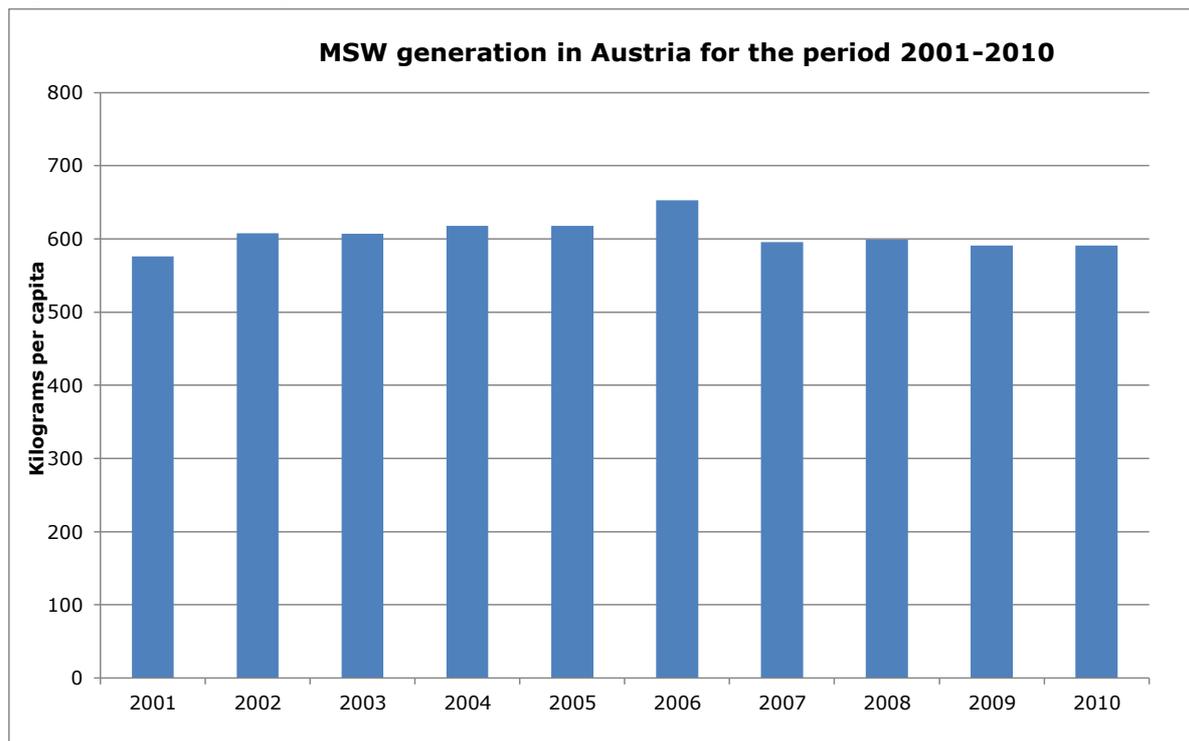
Waste management facilities are partly governed by waste legislation and partly by commercial law. The requirements for an environmentally sound thermal treatment as well as for landfilling are prescribed in ordinances. The Federal Ministry of Agriculture, Forestry, Environment and Water Management published a guideline for mechanical biological treatment (MBT). In addition, the Federal Waste Management Plan 2011 contains provisions on the proper treatment for specific waste streams. The environmental and health impacts are to be minimized according to these provisions.

All municipal waste incineration plants since 1991 feature energy recovery for district heating, and different waste types (including waste wood) are used to replace fuels in industry.

2.1 MSW Indicators

Figure 2.0 shows the development of MSW generation per capita in Austria from 2001 to 2010. There has been a stabilisation during the period. The total amount of MSW generated in Austria has increased by 7 % percent from 4.63 million tonnes in 2001 to 4.96 million tonnes in 2010. However, due to an increase in the separate collection of waste, the increase in residual household waste is somewhat below this figure, seeing an increase by only 5 % over the same period.

Figure 2.0 MSW generation per capita in Austria



Source: Eurostat, 2012

Austria has a long tradition for diverting waste from landfill and has a long established good recycling system and performance. Most of the MSW generated in the country is either recycled or incinerated. Below some indicators regarding the development of MSW management are shown.

2.1.1 The recycling of MSW from 2001 to 2010

In Austria, the overall performance in terms of MSW recycling has remained consistently at a high level over the last decade.

As illustrated by Table 2.1, households and similar establishments generated approx. 3 895 000 tonnes of waste in 2009. Of this amount, the waste management system collected about 1 402 100 tonnes of residual waste and some 259 100 tonnes of bulky waste. Some 2 233 800 tonnes or about 57 % of the total amount accumulated was collected for recycling or special treatment through separate collection.

Table 2.1 Composition of household waste generated in Austria in 2009

Nationwide quantities by individual fraction	Quantities (tonnes)
Residual waste	1 402 100
Bulky waste	259 100
Biogenic waste and green waste	752 100
Waste paper	677 000
Waste glass	211 600
Waste wood	183 200
Light fraction	148 100
Scrap metal – household scrap (bulky waste collection)	86 800
Waste metals	30 600
Waste textiles	26 000
Other recoverables	22 600
Hazardous household waste	23 200
Waste electrical and electronic equipment	72 600
Total	3 895 000

Source: Federal Ministry of Agriculture, Forestry, Environment and Water Management, 2011: Federal Waste Management Plan, 2011

As illustrated by Figure 2.1, over the ten year period the total recycling rate accounted for 55-63 % out of which 22-30 % was material recycling (including metal, glass, plastic, paper and cardboard recycling, but excluding composting), while composting and other biological treatment together accounted for 33-39 % in the years between 2001 and 2010.

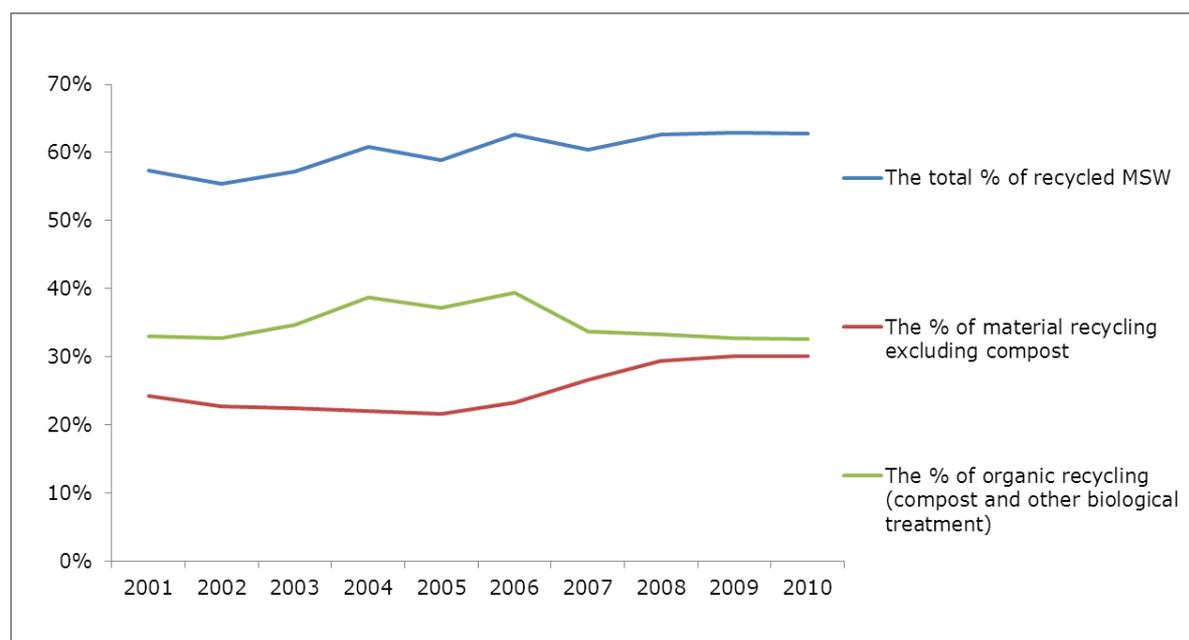
This is the highest recycling level in Europe and it has been at such a high level over the last decade. According to ARGE Kompost & Biogas (Federal Waste Management Plan, 2011), some 935 000 tonnes of organic waste were treated in composting facilities in 2009.

A further approx. 555 000 tonnes of waste were treated in MBT plants in Austria. Of this, approx. 321 000 tonnes were biologically treated, approx. 222 000 tonnes (the high calorific value fraction) were separated and sent for incineration, and the remaining approx. 12 000 tonnes were metals recovered for recycling.

As the biologically treated residues from MBT (271 000 tonnes) do not fulfil the compost criteria and thus are landfilled, only the 12 000 tonnes of recovered metals can be taken into account in the recycling rate.

While the total recycling rate has stayed rather stable since 2005, material recycling has slightly increased at the expense of biological treatment.

Figure 2.1 Recycling of MSW in Austria



Source: Eurostat, 2012. The percentages are calculated as % of generated MSW.

Note: According to comments from the Austrian UBA in the reports to Eurostat, the biologically treated output from MBT was allocated to the category “compost”. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) are not compost but waste to be landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years in all relevant graphs.

2.1.2 The yearly increase rate of recycling of MSW

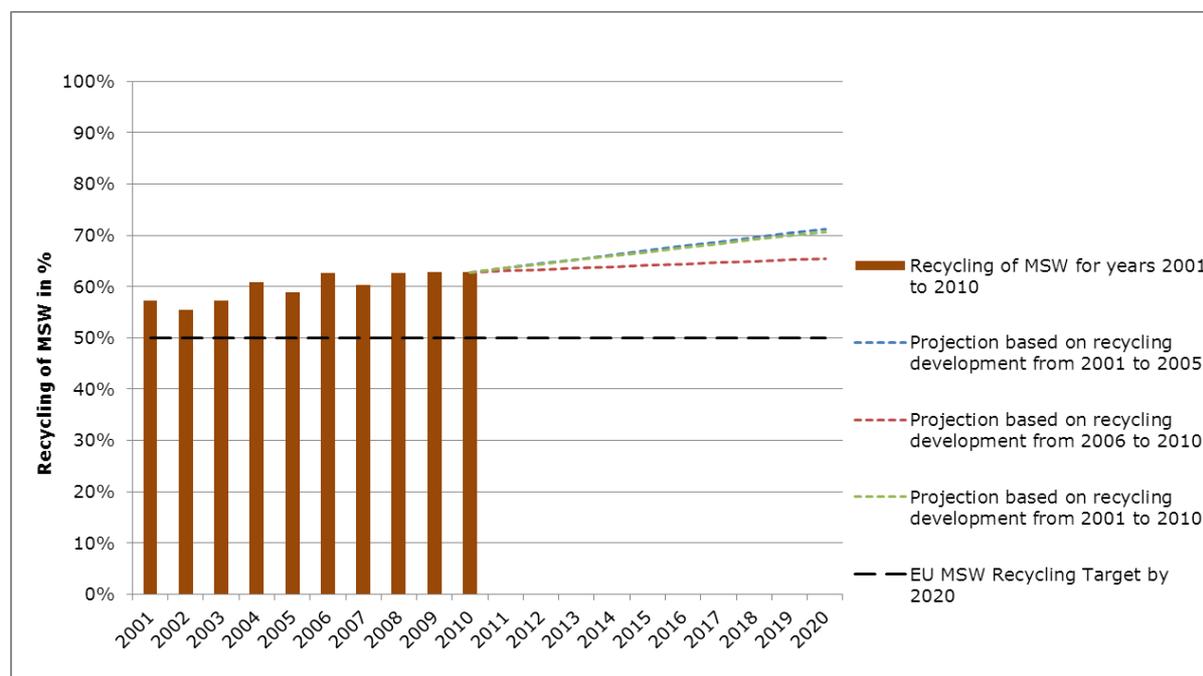
Figure 2.2 shows how the level of MSW recycling has changed in Austria per year during the last five and ten years. The indicator presented below for Austria shows that the country has already had a recycling performance of well over 50 % in 2001, meeting the target set by the EU legislation to be achieved by 2020².

In order to assess the prospects for meeting the 50 % recycling target as set out in the Waste Framework Directive, three scenarios have been calculated. The scenarios assume that recycling in the period 2010 to 2020 develops, based on a linear regression, with the increase rates of recycling in the periods 2001-2005, 2006-2010 and 2001-2010.

It is very unlikely that the country will face any problems in the future in terms of meeting the EU targets on recycling. The extrapolation of different intervals of 2001-2010 data results suggests that a potential further improvement up to 65-70 % in the rate of recycling may occur.

² EU's updated Waste Framework Directive from 2008 (EU, 2008) includes a new 50 % recycling target for waste from households, to be fulfilled by 2020. In 2011, the European Commission decided that countries can choose between four different calculation methods to report compliance with this target. One of these methods is to calculate the recycling rate of MSW as reported to Eurostat (EC, 2011).

Figure 2.2 Future recycling of MSW in Austria



Source: Calculation done by Copenhagen Resource Institute (CRI) based on Eurostat, 2012

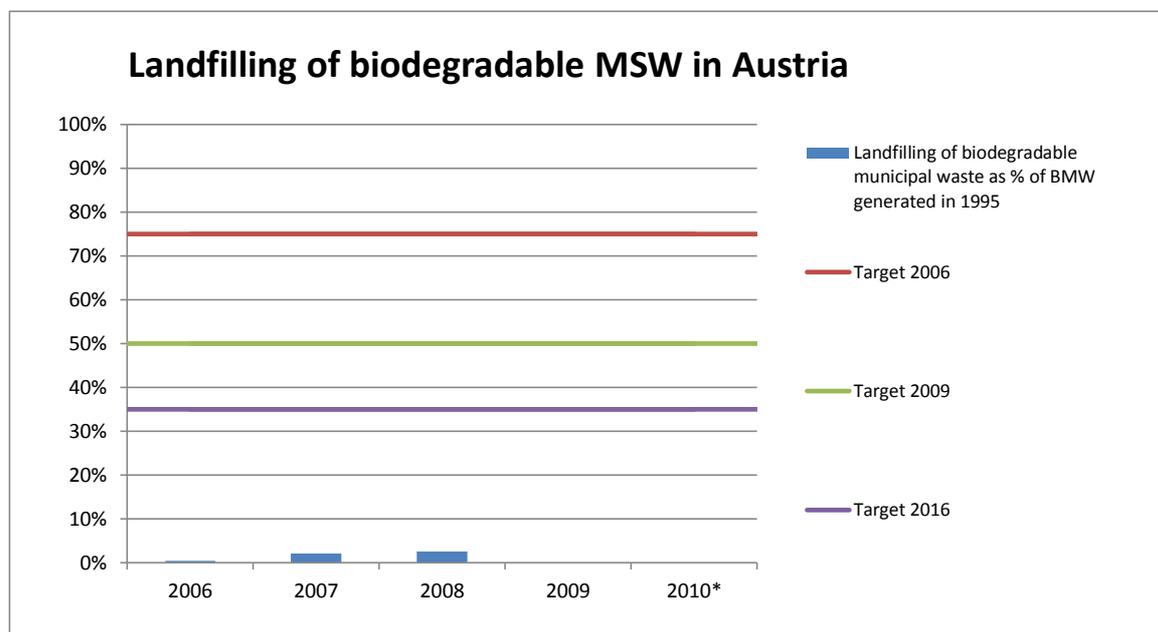
Note: According to comments from the Austrian UBA, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category “compost”. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) does not meet the quality requirements for compost and is landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years in all relevant graphs.

It has to be kept in mind that these three scenarios are very simplistic and do not take into account any planned policy measures. In addition, they are based on one calculation methodology for recycling of municipal waste (MSW recycled/MSW generated, using data reported to Eurostat) whereas countries may choose to use another methodology to calculate compliance with the 50 % recycling target of the Waste Framework Directive. The scenarios in Figure 2.2 should therefore be interpreted only as to give some rough indications.

2.1.3 Landfilling of biodegradable municipal waste

According to the EU Landfill Directive, all Member States have to reduce the amount of biodegradable municipal waste (BMW) landfilled by a certain percentage by 2006, 2009 and 2016. The targets are related to the amount of BMW generated in 1995. Austria has already met all three targets, having reduced BMW landfilled to below 3 % (of the generated amount in 1995) already by 2008.

Figure 2.3 Landfilling of biodegradable municipal waste in Austria as % of BMW generated in 1995



Source: EU, 2012 and CRI calculation*. The figures for 2010 are CRI estimations.

Ban on biodegradable municipal waste

All main legislation to divert biodegradable municipal waste from landfills has been adopted in Austria before the respective EU legislation came into force. Austria has achieved a decrease to almost zero BMW landfilling following the full implementation of the landfill ban from 2004 by 2008. The Austrian strategy to divert Biodegradable Municipal Waste from landfills works with two approaches (ETC/SCP, 2009):

1. Austria has had a separate collection policy since 1992 that was introduced on biogenic waste all over the country. In 2008, about 105 kg/capita of biogenic waste was collected separately.

The obligation for separate collection refers to biowaste and packaging paper waste. The separate collection is supported by additional measures. The Compost Ordinance regulates the quality of compost produced of waste with the aim to improve its competitiveness on the market while limiting environmental impacts. For paper waste (packaging as well as graphic paper) an effective separate waste collection system was installed providing separate bins almost for every house.

2. The second approach is the landfill ban for untreated waste. In Austria, the landfilling of waste with total organic carbon (TOC) content over 5 % is banned. However, there are exceptions of this ban, e.g. for the treated output from MBT. The ban came into effect in 2004 (with exemptions until 2008); this is particularly relevant to MSW, hence the strong decline in the rate of MSW landfilled from 2004 onwards.

The two approaches are supplemented by a landfill tax for the landfilling of waste (see section 2.1.5 later on).

Austria also extensively uses MBT and currently has 16 plants with a total authorized capacity of 741 100 tonnes (Federal Waste Management Plan, 2011). In 2009 approx. 555 000 tonnes of waste were sorted or treated in mechanical biological treatment plants in Austria.

In MBT mostly 'residual' municipal solid waste is sorted and treated. This is the part of the municipal solid waste which is not separately collected for recycling. In the MBT at first the 'residual' municipal solid waste is separated into the following three fractions:

1. the lower calorific value fraction containing the bulk of the biodegradable waste
2. the higher calorific value fraction (mostly plastics)
3. metals.

The lower calorific value fraction is biologically treated at the MBT plants. This is meant to be a pre-treatment step before landfilling. The hazardous substances in the biologically treated output of the MBT are too high, so that this output must not be used as compost on soils.

The separated higher calorific value fraction (mostly plastics) is forwarded to incineration for energy recovery. The metal fraction is recycled. All functions of MBT combined contribute to the diversion of the MSW from landfills.

From the MBT input, according to the Austrian UBA 57.8 % can be classified as being biologically treated, 40 % as incinerated and 2.2 % as metal-recycled.

2.1.4 Regional differences of MSW recycling from 2001 to 2010

Figure 2.4 shows regional differences in the development of MSW recycling from 2001 to 2009 related to total recycling, material recycling and organic recycling based on data reported to Eurostat. For each type of recycling three different regions have been chosen:

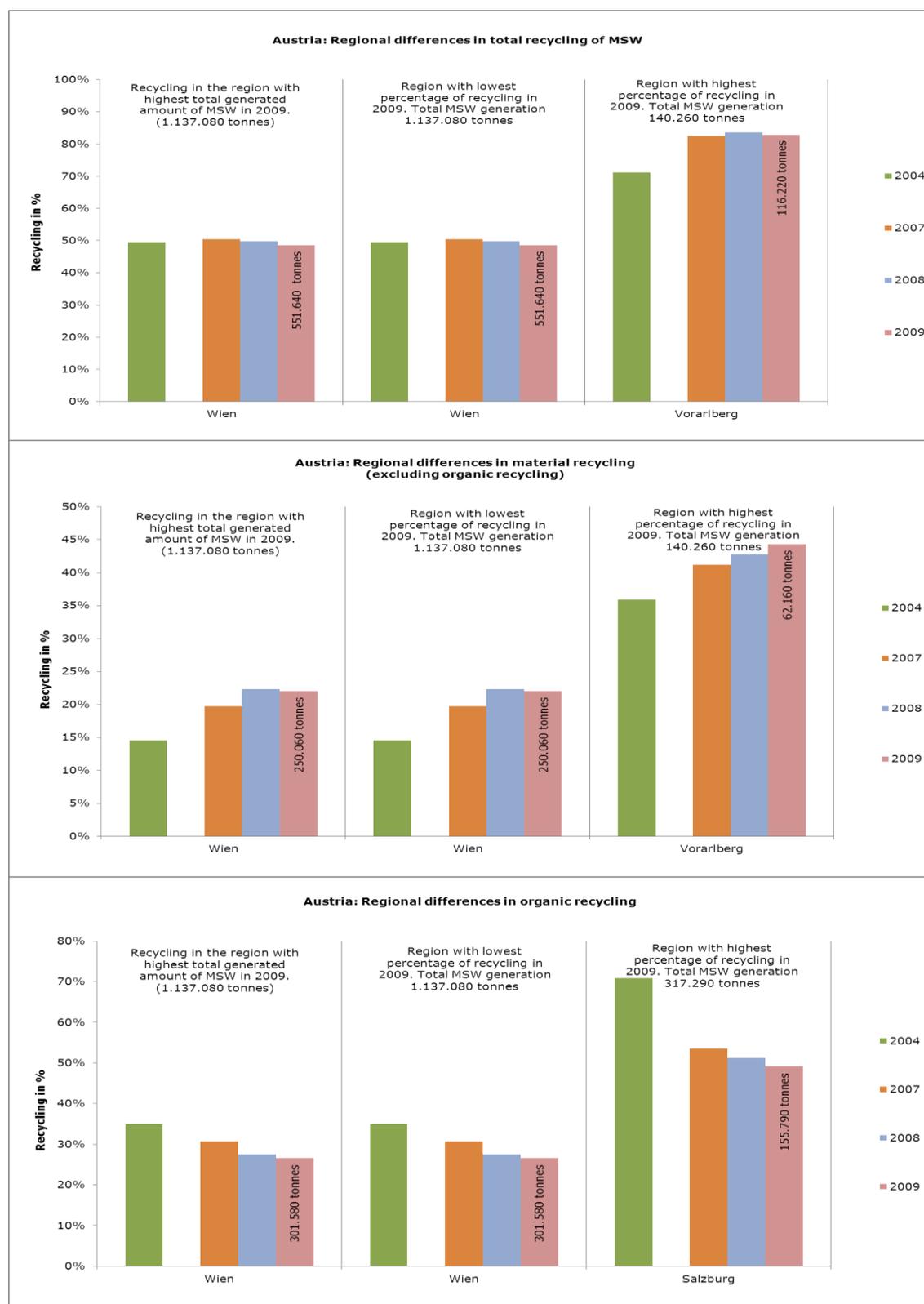
- Recycling in the region with the highest total generated amount of MSW in 2009;
- Recycling in the region with the lowest percentage of recycling in 2009 and
- Recycling in the region with the highest percentage of recycling in 2009.

The figures present data on: the total percentage of recycled MSW, the percentage of material recycling excluding compost and the percentage of organic recycling (compost and other biological treatment). In Austria, out of the nine regions of the country, three are represented on Figure 2.4 below.

The Wien (Vienna) region covers the capital region with both the highest amount of MSW generated, but the lowest percentage of both material (22 %) and organic (27 %) – and thus total (49 %) – recycling. The relative low level – compared to the rest of the country – of recycling is taking place on the account of higher share of incineration (around 50 %, not presented on the graphs) in the region. Still, this is a high recycling rate compared to other metropolitan regions in Europe.

The Voralberg region (situated in the westernmost part of Austria) has the best material recycling performance (44 %) and the Salzburg region has the highest share of organic recycling (49 %).

Figure 2.4 Regional differences in recycling of MSW



Source: Eurostat regional data, 2012.

Note: According to comments from the Austrian UBA, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category 'compost'. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) are not compost but waste to be landfilled. Thus, 7% of MSW generation is deducted from organic recycling and added to landfilling for all years on all relevant graphs. **However, this correction has not been done for the regional figures above as no information was available about this issue for the regional data.**

Map 2.1 Regions in Austria



Source: <http://www.austria.info/us/provinces-and-regions>

Although all regions have a high recycling rate there are in fact quite large differences between the regions. This is the case both for material recycling and organic recycling. The graphs therefore give a clear indication of how regional and local policies in Austria have indirectly had a significant influence on the recycling levels of MSW.

Similarly to the nation-wide trend (Figure 2.1), the overall recycling performance has been stable, but a decrease in organic recycling can be observed while material recycling has been increasing at the same time in the three regions presented. This change was most significant between 2004 and 2007 in all three areas.

2.1.5 The relation between landfill tax level and recycling level of MSW

The Austrian landfill tax ('Altlastenbeitrag' or ALSAG-tax) was introduced in 1989 with the aim of raising revenues for the clean up of contaminated sites. Since 1996, rates have been differentiated according to the technical quality of the landfill site and to the type of waste landfilled.

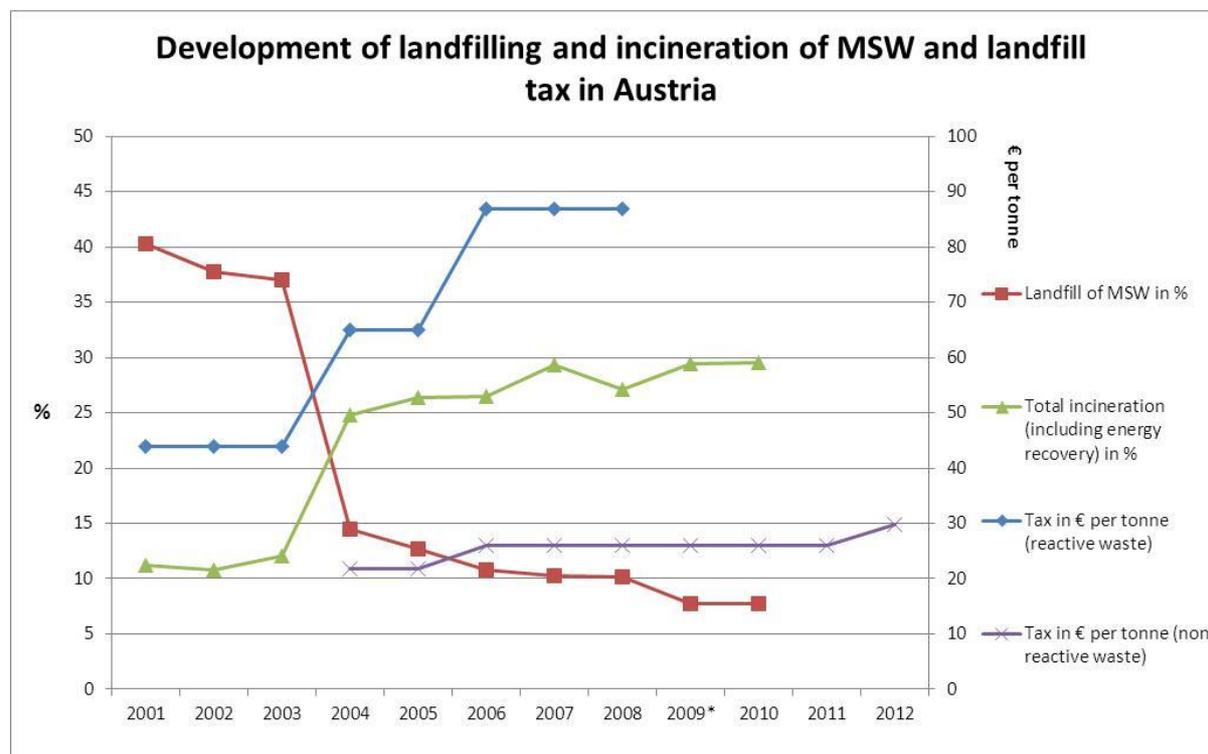
In the period 1996 to 2008 sites with lower technological standards, e.g. without landfill gas capture, paid a much higher rate than landfills with state-of-the-art technology. The "low-standard-landfills" were phased out by 2008 so that the respective tax rate is not applied any more. The 'Altlastenbeitrag' was extended in 2006 to cover incineration (ETC/SCP, 2012).

Indicators presented on Figures 2.5 and 2.6 illustrate the development of the tax against that of material and organic recycling as well as landfilling and incineration between 2001 and 2010.

The fee for the landfilling of biodegradable waste was EUR 44 in 2001; EUR 65 in 2004; and EUR 87 in 2006. Since 2009 waste containing more than 5 mass-% TOC is banned from landfilling, except for mechanically-biologically pre-treated waste which has a landfilling fee of EUR 26 in 2009 and EUR 29.8 in 2012 (ETC/SCP, 2012).

A strong correlation between increasing landfill tax rates and decreasing rates of landfill for MSW appears in Austria: The gradually increasing tax (until 2008) had its positive impact on reducing landfilling together with the ban on landfilling gradually implemented between 2004 and 2008. Afterwards, from 2009, the landfill tax level was dropped to a lower level given the very low levels of MSW landfilling.

Figure 2.5 Development of landfilling and incineration of MSW and landfill tax in Austria



Source: ETC/SCP, 2012 and Eurostat, 2012.

Note: According to comments from the Austrian UBA, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category 'compost'. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) are not compost but waste to be landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years on all relevant graphs.

Note: *since 2009, waste containing more than 5 mass-% TOC is banned from landfilling, except for mechanically-biologically pre-treated waste, which has higher limit values.

The tax on landfill contains the following categories:

1. Tax for other (reactive) waste on non-compliant landfills
2. Tax for other (reactive) waste on compliant landfills
3. Tax for non-reactive waste (fulfilling the conditions of Massenabfalldeponie)

Table 2.2 Landfill taxes in Austria

ALSAG - landfill tax for municipal waste in €/t	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Tax for non-reactive waste (fulfilling the conditions of Massenabfalldeponie)	na	Na	na	21.8	21.8	26	26	26	26	26	26	29.8
Tax for other (reactive) waste on compliant landfills	43.6	43.6	43.6	65	65	87	87	87	87	na	na	na
Tax for other (reactive) waste on non-compliant landfills	72.7	72.7	72.7	94	94	116	116	na	na	na	na	na

Source: Altlastensanierungsgesetz (BGBl 1989/299) in the versions valid during the respective years. Vienna

Before 2001, the differentiation of the landfill tax has caused a clear incentive to modernise the Austrian landfills: While in 1996-1997, 21 sites did not meet the latest technological standards, by 1999 this had decreased to only 4 sites (ETC/SCP, 2012).

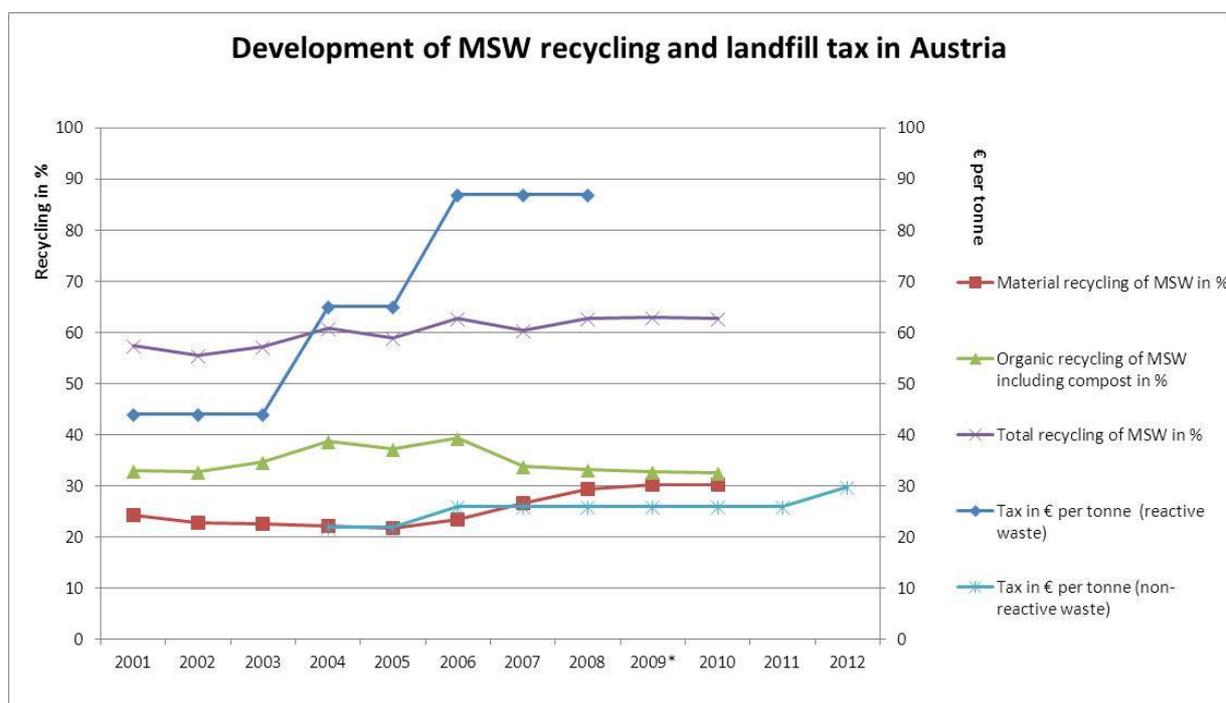
It must be noted here that the first Landfill Ordinance in Austria came into force in 1996. The landfill tax had additional effects on the main drivers – as found by the Austrian UBA – which are the provisions of the Ordinance.

It seems from the figures that the landfill tax has first of all given incentive to incinerate MSW. Austria has an incineration tax (EUR 7/t before 2012 and EUR 8/t from 2012) – much lower than the tax on landfilling.

Furthermore, the landfill tax, together with the landfill ordinance, has encouraged recycling and recovery of waste. Both measures led to reduced quantities of waste going to landfill. According to the Austrian Federal Environment Agency (ETC/SCP, 2012), this effect is demonstrated by the following figures:

- the amount of landfilled waste from households and similar establishments was reduced by about 34 % from 2004 to 2009;
- the total amount of landfilled waste dropped by 28 % from 2003 to 2010;
- the revenues declined by about 50 % in recent years (despite higher landfill rates).

Figure 2.6 Development of MSW recycling and landfill tax in Austria



Source: ETC/SCP, 2012 and Eurostat, 2012

Note: According to comments from the Austrian UBA, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category “compost”. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) are not compost but waste to be landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years on all relevant graphs.

2.1.6 Environmental benefits of better MSW management

Figure 2.7 shows the development of GHG emissions from MSW management, calculated by using a life-cycle approach. The graph shows the direct emissions, the avoided emissions and the net emissions of the MSW management system.

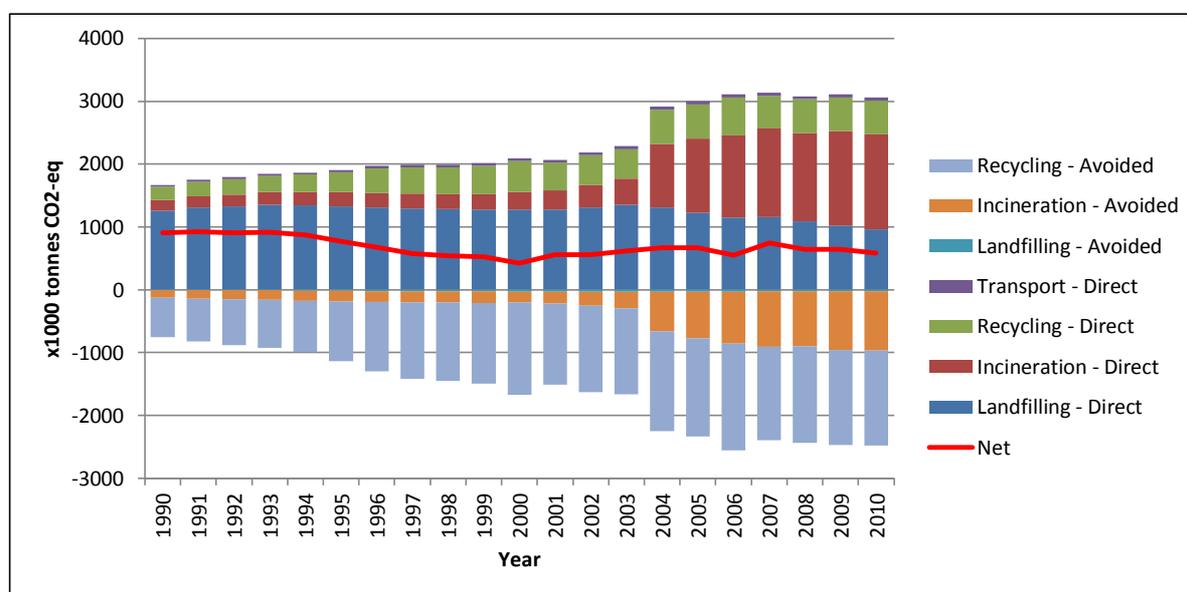
All the GHG emissions (positive values) represent the direct operating emissions for each waste management option. These direct operating emissions have been calculated with the use of the IPCC methodology for landfills and incineration and life cycle modelling for the other technologies (recycling, biotreatment and transport).

For the indirect avoided emissions (negative values), the calculations integrate the benefits associated with the recovery of energy (heat and electricity generated by incinerators, electricity generated by the combustion of landfill gas or methane from anaerobic digestion). Other avoided emissions include the benefits of recycling of food and garden waste, paper, glass, metals, plastics, textiles and wood in the municipal solid waste. Recycling in this area is assumed to include material recycling and biotreatment.

The avoided emissions of biotreatment include fertilizer substitution. All processes generating electricity are assumed to substitute the electricity mix of Austria in 2009. Processes generating heat are assumed to substitute the average heat mix for the EU-25 in 2002. The electricity mix and heat mix are assumed to remain constant throughout the whole time series. The complete methodology is available from Bakas et al. (ETC/SCP, 2011).

The compositions of the MSW disposed in landfills, incinerated or recycled respectively are based on Bakas et al., ETC/SCP, 2011. In an Eionet consultation process, initiated by the EEA in 2012, Austria updated the composition of the recycled MSW for 2009.

Figure 2.7 GHG emissions from MSW management in Austria



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

Figure 2.7 shows that the direct emissions from waste management have gradually increased until 2006, where it stabilized at around 3.1 million tonnes and from that point it has changed into a slightly decreasing trend. Since 2004, the landfill ordinance requires the pre-treatment of reactive waste prior to landfilling. Therefore, household waste is incinerated or pre-treated in a mechanical biological treatment plant in order to reduce its total organic content. Direct emissions of greenhouse gases from landfill were reduced considerably because of the pre-treatment.

Although no reactive waste is allowed to be landfilled any more, the Austrian landfills will continue to emit greenhouse gases, because BMW landfilled, e.g. 10 years ago, will continue to emit a certain amount of greenhouse gases.

However, the increased recycling of MSW results in more and more avoided greenhouse gas emissions because products based on virgin material generate more life-cycle emissions than if the products are based on recyclables. This positive impact can already now be recognised in Figure 2.7 in the whole period from 1991 to 2010.

If avoided emissions are higher than direct emissions, one could conclude that it would be better for the environment to generate and recycle more waste. That is of course not the case. The reason is that the model only focuses on waste management and not the full production chain and its consequences in a life cycle perspective. Therefore, the increasing consumption of goods (and resulting generation of more municipal solid waste) is more harmful for the environment, if all life-cycle stages of materials were taken into account (ETC/SCP, 2011).

2.2 Uncertainties in the reporting

Some uncertainties or differences included in the reporting of MSW can result in different recycling levels. An example of such differences is the amount or proportion of packaging waste included. It seems that there are some major differences regarding how much recycling of packaging waste the different Member States include in their reporting of MSW.

Figure 2.8 Comparison of packaging waste recycled and MSW recycled from 2001 to 2010



Source: Eurostat, 2012

The graph indicates that Austria includes a reasonable amount of packaging waste recycled in its reporting of MSW recycled. However, it is difficult to explain the development presented in Figure 2.8 where the amount of recycled MSW has been increasing between 2005 and 2010 by some 36 %, while there was no change in the amount of packaging waste recycled.

Figure 2.1 indicates that most of the increase in MSW recycling was due to increased material recycling (and not biological recycling). It would be interesting to analyse which waste streams other than packaging waste were responsible for the increase in material recycling, possibly a high increase in separate paper collection.

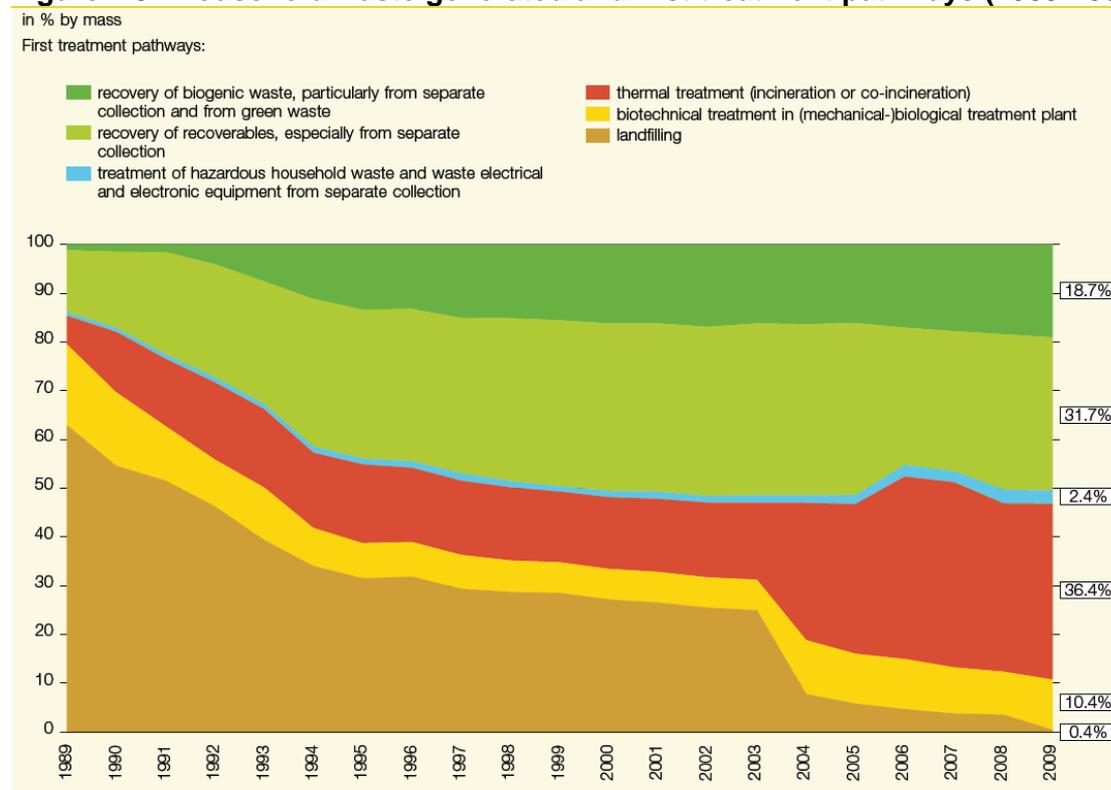
Furthermore, as noted earlier, according to comments from the Austrian UBA provided to the earlier draft version of this paper, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category ‘compost’. In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generated) is not compost but waste to be landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years in all relevant graphs.

2.3 Important initiatives taken to improve MSW management

In the Austrian Waste Management Plan 2011, a list of all recycling and waste treatment facilities of the country in 2010 is available providing a complete overview on the recycling, recovery and disposal facilities as well as other waste processing facilities such as plants for sorting. Inter alia, the capacity is indicated for single facilities (e.g. incineration facilities) and for Austria as a whole.

As Figure 2.9 below illustrates, it has been mainly incineration that has increased dramatically over the last 10 years, while many policy initiatives were taken in the early 1990’s in order to improve recycling.

Figure 2.9 Household waste generated and first treatment pathways (1989-2009)



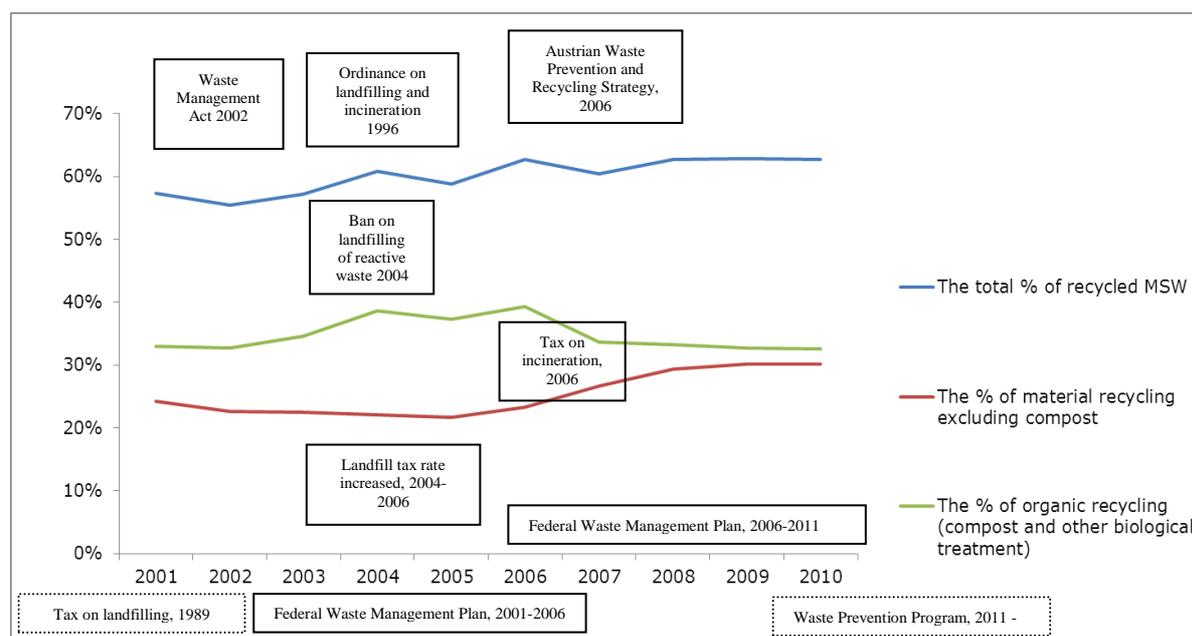
Source: Federal Ministry of Agriculture, Forestry, Environment and Water Management, 2011: Federal Waste Management Plan, 2011

Note: This figure indicates that the composted amount is 18,7% in 2009 whereas in Figure 2.1 it is rather above 25% (after deducting 7%).

The findings of this paper as well the SOER2010 country assessment on Austria show that the most important steps taken to increase recycling and decrease GHG emissions in the waste management sector have been achieved by the following initiatives (EEA, 2010):

- The Act on the Remediation of Contaminated Sites (ALSAG) in 1989 introduced a levy on landfilled waste which on the one hand finances the remediation of contaminated sites and on the other hand provides a financial incentive on treating and recycling waste instead of landfilling it.
- In 1992 the separate collection of packaging and biogenic waste was introduced all over Austria; in 2008 about 875 000 tonnes of biogenic waste was collected separately, corresponding to 105 kg/cap.);
- Ban on landfilling of reactive waste, which entered into force in 2004 (several exemptions until the end of 2008);
- Increase of the landfill tax in 2004 and 2006 and the incineration tax in 2006;
- Austrian Waste Prevention and Recycling Strategy in 2006;
- Rapid development of separate collection of paper (685 000 t in 2007; 83 kg/capita) and other fractions due to mandatory separate collection at households.

Figure 2.10 Recycling of MSW in Austria and important policy initiatives



Source: Eurostat, 2012

Note: According to comments from the Austrian UBA, in the reports to Eurostat, the biologically treated output from MBT was allocated to the category "compost". In reality this output (271 000 tonnes in 2009 or 7 % of the MSW generation) is not compost but waste to be landfilled. Thus, 7 % of MSW generation is deducted from organic recycling and added to landfilling for all years on all relevant graphs.

2.4 Future possible trends

According to the indicators presented for Austria, it is not likely that the country will face any major problems in terms of meeting the 2020 MSW targets of 50 % recycling. Austria's recycling was over the target rate already in 2010.

In order to further promote the prevention and recovery of waste the Federal Ministry of Agriculture, Forestry, Environment and Water Management introduced a waste prevention and recycling strategy already in 2006 and prepared a Waste Prevention Programme in 2011. Prepared by the Ministry of Environment as part of the Austrian waste management plan, it targets:

- the construction sector
- industries and households in general
- the food sectors (notably food industries, retail, large scale catering establishments, households)
- the re-use sector (including repair networks).

Actions under the programme will focus mainly on providing best practice examples, dissemination of supporting information, establishing networks and removing legislative barriers.

According to the SOER2010 country assessment on Austria (EEA, 2010), it is expected that by 2020, the generation of waste streams containing organic carbon, representing 25 % by mass of all Austrian waste flows, will rise by about 20 % compared to 2008. The amounts that are thermally treated are expected to increase by 24 %, and the amounts recycled by about 30 % while landfilling will recede drastically.

In future, more technical equipment containing a wide variety of pollutants is expected to become waste. Import dependence for scarce materials and competition on the availability of such materials will increase, as well as the imports of final products with unknown composition that may induce a challenge for the waste management system and special recycling technologies might be necessary.

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