Country fact sheet

Municipal waste management

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Norway

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European Environment Agency
European Topic Centre on Waste and
Materials in a Green Economy

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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Author affiliation

2016 updated version: Tommi Vuorinen and Elina Merta, VTT Technical Research Centre (a partner in the ETC/WMGE)

2013 version: Birgitte Kjær, Copenhagen Resource Institute (a partner in the ETC/SCP)

EEA project manager: Almut Reichel

Related country profiles

Country information on waste prevention programmes can be found at:
http://www.eea.europa.eu/publications/waste-prevention-in-europe-2015

For country profiles on material resource efficiency policies, please visit:
http://www.eea.europa.eu/publications/more-from-less/

Contents

Highlights

- The overall treatment of municipal waste (MSW) in Norway is dominated by incineration and recycling, accounting, respectively, for 53 % and 42 % of MSW generated in 2014.
- The total recycling rate decreased by close to 2 percentage points in 2009–2014, mainly due to a decrease in material recycling.
- The 2009 landfill ban seems to have reduced landfilling significantly in the past years. In 2014 only 3 % of the generated MSW was landfilled.
- Regional waste policies have mainly influenced the recycling of organic waste.

1 Introduction

1.1 Objective

Based on historical municipal waste (MSW) data for Norway, 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 differences in management performance;
- indicators relating to the country's most important initiatives taken to improve the management of MSW; and
- future possible trends.

2 Norway's municipal waste management performance

Norway is not a member of the EU but is a European Free Trade Association (EFTA) member and has signed the agreement on the European Economic Area. Through this agreement Norway has an obligation to implement the EU's environmental Directives (OECD, 2011).

Norway is the longest of any European country at 1 752 kilometres, while the population is only 5 million. Being a large country with a relatively small and dispersed population creates significant challenges for waste management.

The first unified law concerning pollution and waste was the Pollution Control Act of 1981. It contained the basic legal framework for waste and waste management (ETC/SCP, 2009).

The Norwegian government used to produce a White Paper on the environment almost every second year, but not every White Paper addressed waste. The White Paper was a report on the state of the environment including a discussion of the government's future environmental policy. The latest White Paper, for 2006–2007, outlined the national waste targets and the instruments needed to reach them. This was an analogue to a national waste management plan, apart from the fact that it did not have a legal force (ETC/SCP, 2009) The current national Waste Management Strategy, published in 2013, provides a review of goals, challenges, and priorities for national targets and programmes for waste prevention and recycling as well as for hazardous waste. The strategy also includes plans to move towards waste prevention. (Miljøverndepartementet, 2013)

Since 2004, municipalities are responsible for the management of household waste, but not for household-like waste from enterprises (Pollution Control Act, 2004). The environmental authorities ensure that municipalities and other MSW management actors comply with national environmental rules and regulations. If inspections uncover non-compliance, a deadline for rectifying the matter is imposed. Non-compliance also entails follow-up supervision, fines, or reporting of the case to the police (Norwegian Environment Agency, 2016).

All operational landfills in Norway are now obliged to comply with the EU Landfill Directive (Norwegian Environment Agency, 2016).

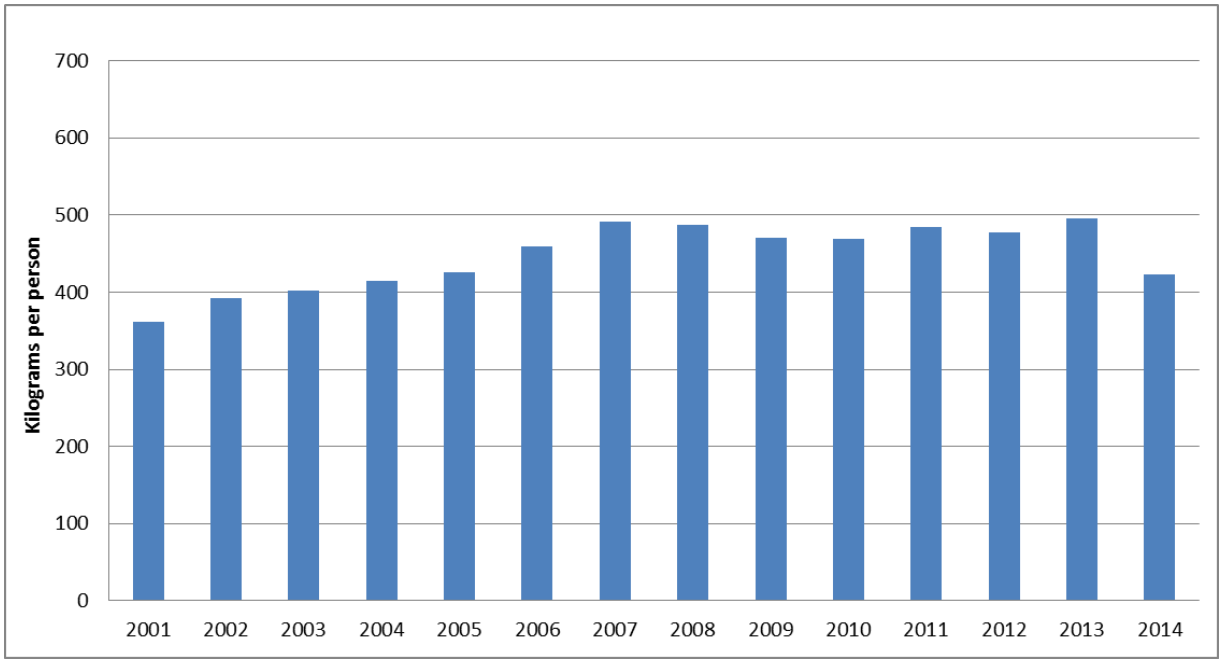
2.1 Municipal waste indicators

The generation of municipal waste increased steadily from 2001 to 2014. In 2014 Norway generated 2.2 million tonnes of MSW, an increase of 34 % compared to 2001. According to Eurostat (2016), 97.8 % of waste generated in 2014 was reported as finally treated.

The following indicators illustrate the development of Norwegian MSW generation and management between 2001 and 2014. All percentage figures have been calculated as proportions of generated rather than managed waste.

Figure 2. shows the development of MSW generation per person in Norway between 2001 and 2014. There was an increase until 2007, when the MSW generated amounted to 491 kilograms per person. From 2007–2013 the amounts generated fluctuated slightly, yet was always less than 500 kilograms per person. In 2014 there was a considerable drop in MSW generation compared to previous years.

Figure 2.0 Norway, municipal waste generation per person, 2001–2014



Source: Eurostat, 2016

The overall treatment of MSW in Norway is mainly split between incineration and recycling. In 2014, incineration accounted for 53 % of generated MSW, 1.15 million tonnes, and recycling 42 %, 918 000 tonnes. Landfilling has decreased in the recent years whereas incineration has increased. Landfilling was only 3 % or 60 000 tonnes in 2014. (Eurostat, 2016) Norway exports much of its waste to be incinerated in Sweden – almost 1.1 million tonnes in 2010 (Naturvårdsverket, 2012). The remaining 2 % can probably be assigned to losses during sorting operations.

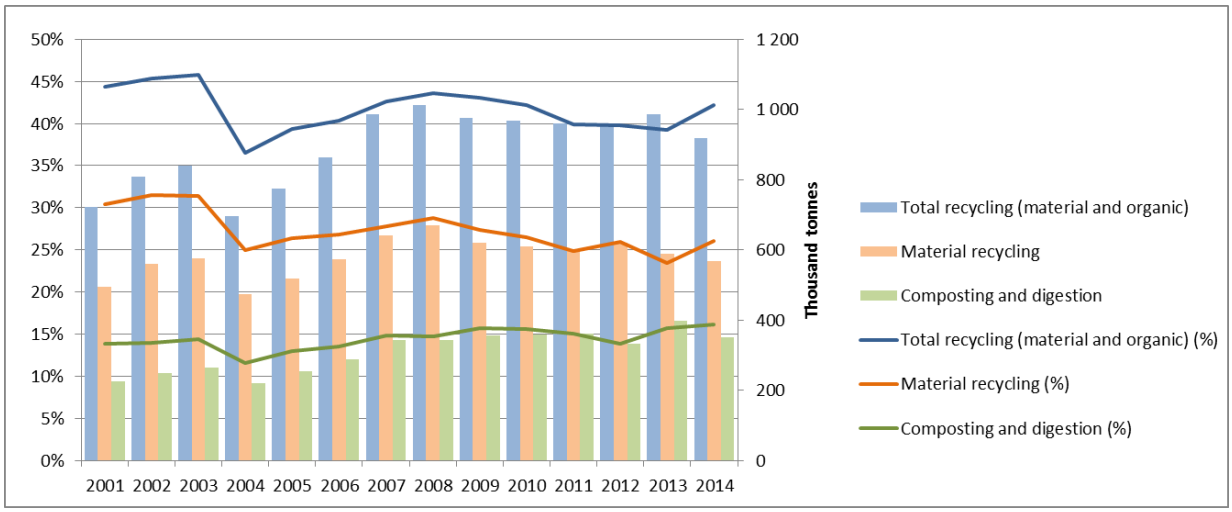
2.1.1 The recycling of municipal waste, 2001–2014

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

Figure 2.1 demonstrates a drop in recycling in 2004. The amount of waste recycled decreased by 145 000 tonnes from 2003 to 2004. This may have been due to the new regulation of 1 July 2004 that changed the responsibility of the municipalities (Pollution Control Act, 2004), which resulted in

municipalities having to compete with private companies for collection of household-like waste from enterprises. Because of this, municipalities may have collected fewer recyclables from enterprises, and therefore less waste was counted as recycled municipal waste. As a result, pre-2004 data are not directly comparable to post-2004 data.

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



Source: Eurostat, 2016.

Total recycling of MSW increased from 37 % to 44 % between 2004 and 2008. In 2014 the total recycling rate was to 42 %. This decline in between is mainly due to a decrease in material recycling from 29 % in 2008 to 23 % in 2013. In the same period the share of organic recycling increased slightly from 15 to 16 %. The increased recycling rate in 2014 seems to be linked to the decrease in MSW generation.

Municipal waste consists of household waste and household-like waste collected from enterprises by municipalities. The total amount of MSW was 2.3 million tonnes in 2014. (SSB 2015) Approximately 90 % of this was household waste and 10 % was collected from small enterprises.

Table 2.1 shows that the amount of separately collected waste from households increased by 49 % between 2004 and 2014. The separate collection rate was 56 % for household waste in 2014 (SSB, 2015).

Table 2.1 Norway, separately collected household waste, 2004–2014, '000 tonnes

	2004	2005	2008	2010	2013	2014
Paper, paper packaging	271	299	335	295	293	277
Glass	41	44	49	51	55	57
Plastic	8	9	18	25	34	36
Metal	53	54	64	68	78	83
Waste electrical and electronic equipment	31	39	50	42	46	47
Food waste	156	152	172	172	174	182

Wood	113	129	176	191	255	274
Garden waste	110	112	140	163	194	159
Textiles	9	11	13	14	1	0
Hazardous waste	16	23	27	32	47	58
Unsorted waste for incineration					39	29
Other	45	35	45	58	57	68
Total	853	907	1 089	1 111	1 273	1 270

Sources: SSB, 2015; SSB, 2012b and SSB 2005.

It has to be stressed that the amount of waste collected separately is not equal to the amount recycled as some of waste fractions, such as hazardous waste, is not collected for recycling.

The EU's 2008 WFD includes a target for certain fractions of MSW: 'by 2020, the preparing for re-use 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 target[1]. Norway is bound by this EU legislation through the European Economic Area agreement. Norway has chosen calculation method 3, although no data on recycling rates in Norway are available according to this methodology yet. The recycling rates shown in this paper correspond to method 4, the only method for which time series data exist. 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 (BMW) landfilled to 75 %, 50 % and 35 % by 2006, 2009 and 2016, respectively. The targets are related to the amount of BMW generated in 1995.

Norway has implemented the EU Landfill Directive as part of the European Economic Area agreement (Affallsforskriften, 2004 chapter 9). However, there are no data available for Norway on BMW landfilling.

A very low amount of MSW landfilled in Norway, 2 % in 2013 (Figure 2.4), and a landfill ban was introduced in 2009 (ETC/SCP, 2009).

[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).

2.1.3 Regional differences of municipal waste recycling, 2001–2013

Norway has reported regional MSW recycling data to Eurostat. Map 2.1 shows regional differences in the MSW recycling for 2013, the latest year for which regional data are available at Eurostat.

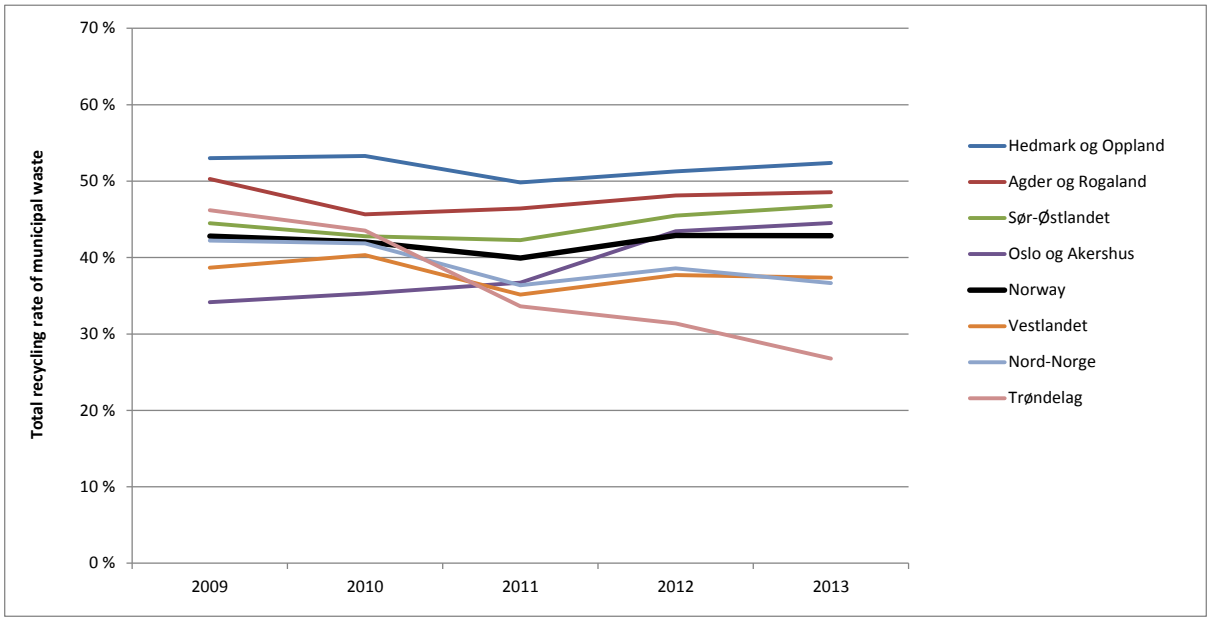
Map 2.1 Norway, regional differences in municipal waste recycling, 2013

Source: Eurostat, 2015b

The differences in total recycling of MSW are mainly linked to differences in organic recycling. The material recycling rates varied between 22 % and 26 % in 2013.

Figure 2.2 shows regional differences in MSW total recycling rates between 2009 and 2013. The numbers include material recycling and organic recycling.

Figure 2.2 Norway, regional differences in recycling of municipal waste, 2009–2013



Source: Eurostat, 2015b

The Oslo and Akershus region has increased its total recycling rate from 34 % in 2009 to 45 % in 2013. Hedmark and Oppland had the highest rates – 53 % in 2009 and 52 % in 2013.

Organic recycling in Oslo and Akershus has increased from 9 % in 2009 to 16 % in 2013. In Hedmark and Oppland the organic recycling was 27 % in 2009, dropped to 20 % in 2012 but rose again to 26 % in 2013. The differences might be explained by the accessibility to kerbside collections of food waste. For example in 2009, in Oslo and Akershus only 30 % and 26 %, respectively, of citizens were offered these kerbside collections, while in Hedmark and Oppland the percentage of households covered by them was 64 % and 90 %, respectively (SSB, 2012c).

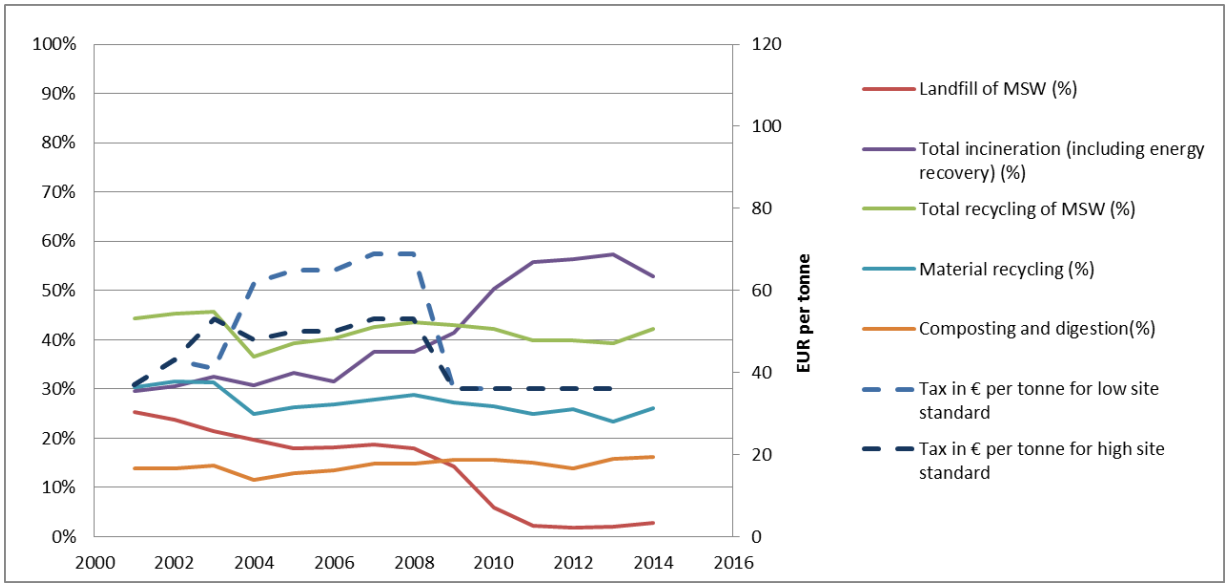
Norway is a country with a small population but it has a large geographical area with many smaller communities. The northern part of the country is sparsely populated and the infrastructure for recycling may, therefore, be more difficult to install and costly to operate in this area. It seems, however, that regional waste policies do not have a significant effect on material recycling of MSW but do on organic recycling.

2.1.4 Recycling and landfill taxes

The landfill tax in Norway was introduced in 1999 to help reduce the amount of waste landfilled. Since July 2003, landfill tax rates have been differentiated according to the environmental standard of the landfill site to which the waste is delivered. A higher rate was applied to sites not fulfilling the requirements with regard to site linings, but all these were closed down by 16 July 2009. Since then all the landfills are classified as high standard sites, although a few landfills have received short-term exemptions to the new requirements (ETC/SCP, 2012).

The rate of landfilling has decreased from 25 % in 2001 to 2 % in 2013 (Figure 2.), but this not only due to the landfill tax (ETC/SCP 2012). The main decrease, from 14 % in 2009 to 2 % in 2013, seems to be caused by the introduction of a landfill ban on biodegradable waste with less than 10 % total organic carbon (TOC) or less than 20 % organic matter (SSB, 2012a).

Figure 2.3 Norway, landfill tax and the development of recycling, landfill and incineration of municipal waste, 2001–2014, per cent and EUR per tonne



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

The landfill tax and the landfill ban on biodegradable waste seem to have driven MSW away from landfill mainly to incineration while it hardly affected recycling rates (Figure 2.). The amount of MSW incinerated increased from 30 % to 57 % between 2001 and 2013.

The landfill tax was abolished on 1 January 2015. The reason for this was that the tax had lost most of its environmental effect after the ban on landfilling of biodegradable waste was introduced in 2009. (Norwegian Environment Agency, 2016)

In addition to the landfill tax, Norway also had a tax on incineration of waste that was introduced in 1999 but abolished on 1 October 2010 (ETC/SCP, 2012). The abolition was mainly due to the fact that Sweden abolished its incineration tax, which created unfair competition for the Norwegian incineration plants (Klima og Forurensningsdirektoratet, 2012). The introduction of the landfill ban in 2009 combined with no incineration tax from 2010 seems to have increased the amount of waste incinerated.

2.1.5 Environmental benefits of better municipal waste management

No assessment of environmental benefits associated with municipal waste is available for Norway.

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, for 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 mechanical biological treatment (MBT) and sorting plants.

According to Statistics Norway (2014), national statistics are not prepared for municipal waste, but for household waste only. By national legislation the municipalities are obliged to handle all waste from households, and have to keep a separate account of this, even if they collect waste from other sources as well. Some municipalities additionally report the amounts of waste similar to household waste from other sources than households. These numbers are used to calculate a weighted average for the waste similar to household waste and this is then used to estimate the amount of municipal waste for the entire country.

According to Statistics Norway (2014), the reporting of waste undergoing sorting is based on outputs, with rejects from sorting not included in the reported recycled amounts. Home composting is not included in the reporting.

There are no MBT plants in Norway (Avfall Norge, 2010), so this uncertainty does not apply.

2.3 Important initiatives for improving municipal waste management

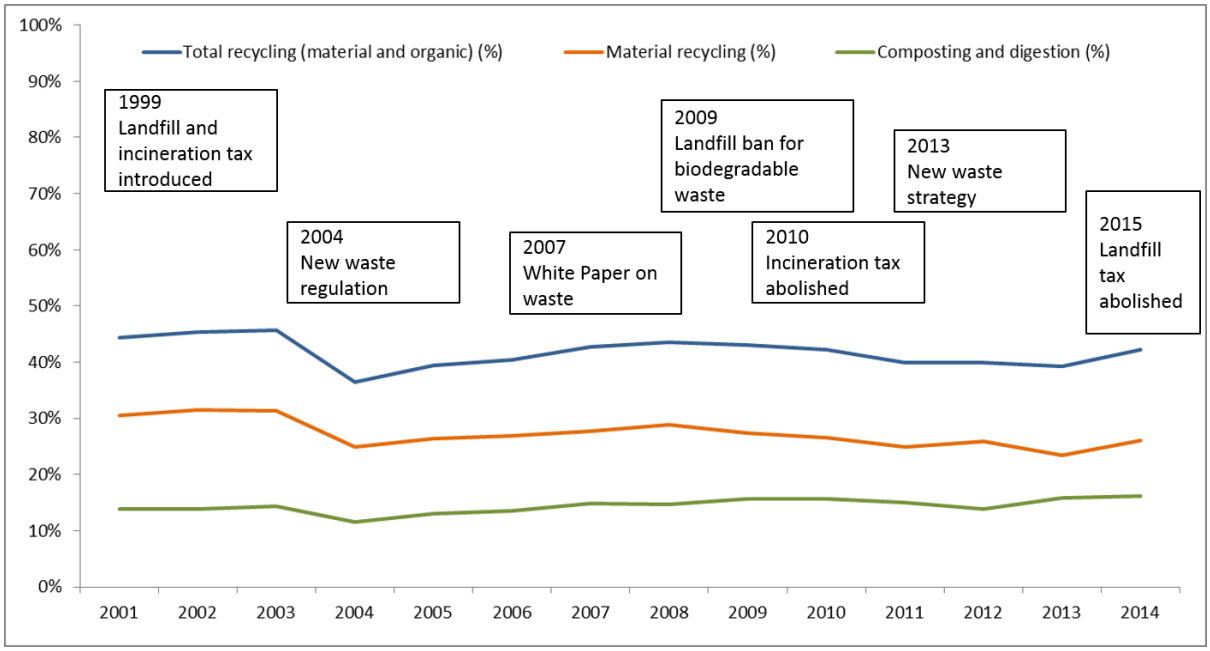
Less and less waste is being landfilled in Norway. This reduction is the result of several measures that were introduced in the waste sector particularly in the 1990s, including a landfill tax (ETC/SCP, 2012).

Three major initiatives were undertaken between 2001 and 2013 that have influenced the management of MSW.

1. Norway's regulatory framework for waste management (Avfallsforskriften 2004) was revised and simplified in 2004. New instruments were applied to curb waste generation and stimulate waste recovery, including taxes on landfill and incineration (OECD, 2011). In 2004 the Pollution Control Act changed the scope of municipal waste only to include household waste.
2. The government 2007 White Paper outlines national waste targets and the instruments needed to reach them. This is an analogue to a national waste management plan, apart from the fact that it does not have legal status (ETC/SCP, 2009). The national target was to increase the percentage of total waste being recycled to 75 % in 2010, with an aspiration to increase it further to 80 % (without a specified target year) (Regjeringen, 2007). There were no separate targets set for MSW.
3. Another important measure was a ban on landfill of biodegradable waste – this applies to waste that contains 10 % TOC or more. The ban was adopted by the Ministry of Environment in June 2008 and implemented on 1 July 2009.

The latest National Waste Management Strategy was published in 2013. This includes plans for actions to reach the national targets for waste prevention and recycling as well as for the handling of hazardous waste. One objective of the strategy is a slower growth in waste volumes than growth of the economy. There is a particular priority to reduce the amount of food waste, an area in which it is possible to reduce waste while providing important environmental benefits (Miljøverndepartementet, 2013).

Figure 2.4 Norway, recycling of municipal waste and important policy initiatives, 2001–2015



Source: Eurostat, 2016

2.4 Possible future trends

A main challenge for the MSW management in Norway is that waste generation, including MSW, is increasing. Until 2008, the amount of household waste increased by 5 % per year which is more than the increase in final consumption. In the last five years, however, the increase in waste has been less than the increase in consumption (SSB, 2015; SSB, 2012a). Secondly, the rate of MSW that is recycled or composted/digested, has been decreasing since 2008, while the share of incinerated amounts is increasing. The Norwegian Waste Strategy (Miljøverndepartementet, 2013) has identified this as a challenge. Overall, Norway will have to speed up its efforts to increase recycling of MSW if it is to meet the EU target of 50 % recycling in 2020.

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