Country fact sheet

Municipal waste management

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Switzerland

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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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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

- In 2014, municipal solid waste (MSW) generation rose to 730 kilograms per person, which is well above the EU average of 474 kilograms.
- The increase in the amount of MSW generated has been accompanied by an improved recycling rate of 54 % in 2014, mainly driven by organic recycling.
- In 2000, Switzerland introduced a ban on the landfilling of combustible waste and took steps to ensure that incineration capacity was expanded. In 2014, landfilling and incineration accounted for 0% and 46 % of MSW generation respectively
- A total lack of landfilling of biological municipal waste (BMW) has been achieved by a combination of incineration and recycling.
- There are no national waste plans on the federal level. Cantons have to draw up their own management plans and review them periodically. The 2015 Ordinance on Waste Prevention and Disposal, replacing the 1990 Technical Ordinance on Waste, regulates waste management within the country.

1 Introduction

1.1 Objective

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

- 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 management of MSW;
- possible future trends.

2 Switzerland's municipal solid waste management performance

Switzerland generates a very high amount of MSW, 730 kilograms per person in 2014, compared to the EU of average of 474 kilograms, but also has a long tradition in diverting waste from landfill – MSW generated is either recycled or incinerated. In 2001–2014, total recycling and incineration accounted, on average, for around 50 % of generated MSW each, while less than 1% was landfilled (Eurostat, 2016).

Responsibilities for waste management are shared between three administrative levels: the federal state, 26 cantons and around 2 800 municipalities. The most important MSW legislation includes the Ordinance on the Prevention and Disposal of Waste (VVEA) of 4 December 2015 which replaced the Technical Ordinance on Waste (TOW) of 1990, the Beverage Containers Ordinance, the Waste Electrical and Electronic Equipment (WEEE) Ordinance, and the Ordinance on the Reduction of Risks Posed by Chemicals, which regulates waste batteries.

2.1 Municipal solid waste indicators

The following indicators illustrate the development of MSW generation and management in 2001–2014. All percentage figures have been calculated by relating the waste managed to the generated amount, which was equal to the treated amount[1].

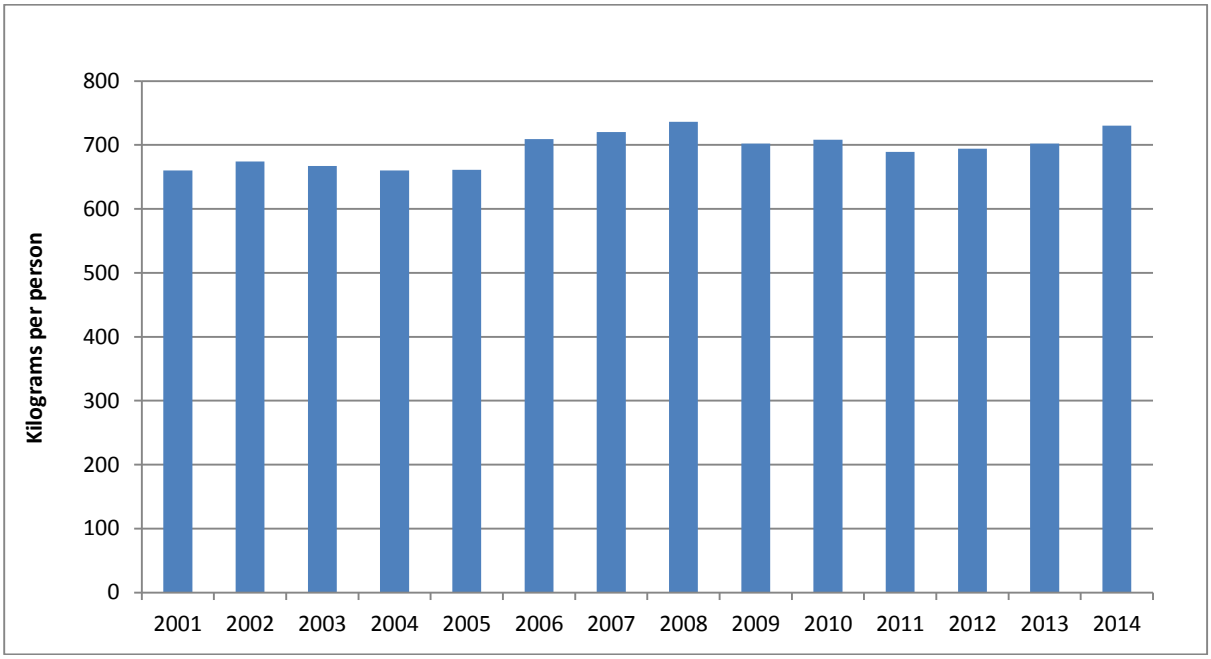
Figure 2.0 shows the development of MSW generation per person from 2001 to 2014. Generation per person peaked in 2008 at 736 kilograms, then decreased slightly, but then returned to 730 kilograms in 2014, well above the EU average of 474 kilograms (Eurostat, 2016).

In absolute terms, the total amount of MSW generated in Switzerland has increased by 25 % per cent, from 4.79 million tonnes in 2001 to 6 million tonnes in 2014.

Please note that since 2004, the imported municipal waste for incineration has been deducted from the figure of municipal waste generated and incinerated (Eurostat, 2013).

[1] The only exception was 2004, when the generated amount was 4 900 000 tonnes and the treated amount was 4 899 000 tonnes (Eurostat, 2016). In this case, percentages have been calculated based on the generated amount.

Figure 2.0 Switzerland, municipal solid waste generation per person, 2001–2014



Eurostat, 2016.

Switzerland has a long tradition of diverting waste from landfill and a well-perfoming long-established recycling system. Most of the MSW generated is either recycled or incinerated (Figure 2.1).

2.1.1 The recycling of municipal solid waste, 2001–2014

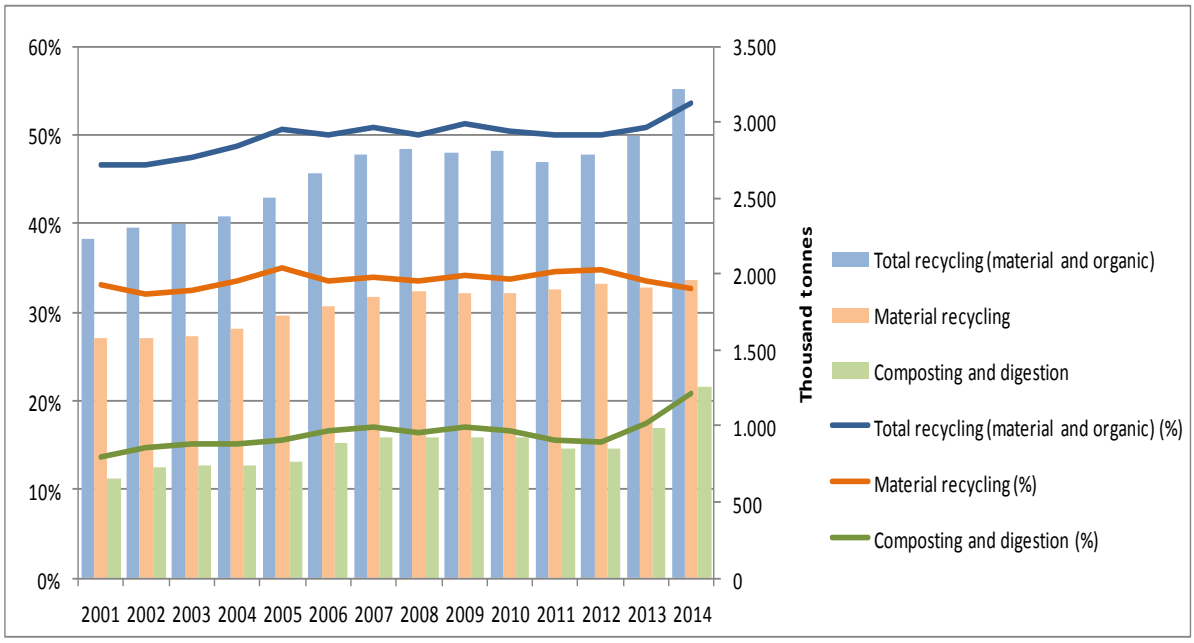
Despite the increase in the total amount of MSW generated, the overall performance in terms of recycling has been very stable at a rather high level over the past decade.

In 2001–2014, total recycling accounted, on average, for 50 % of generated MSW, out of which 34 % was material recycling, including metal, glass, plastic, paper and cardboard, but excluding composting, while composting and other biological treatment together accounted for 16 % (Figure 2.1). There is a potential for further improvement in organic recycling, since, the 2012 waste composition survey, a study carried out by FOEN every ten years, showed that recyclable materials made up 20 % of disposed waste and 67 % of these unused recyclable materials was biogenic waste (FOEN, 2016a).

The total recycling rate increased by approximately 3-4 percentage points over the 2001–2013 period. However, according to Eurostat (2016), total recycling in 2014 increased by 3 percentage points, to 54 %, compared to the previous year due to a 4 percentage point increase in organic recycling, while material recycling decreased by 1 percentage point.

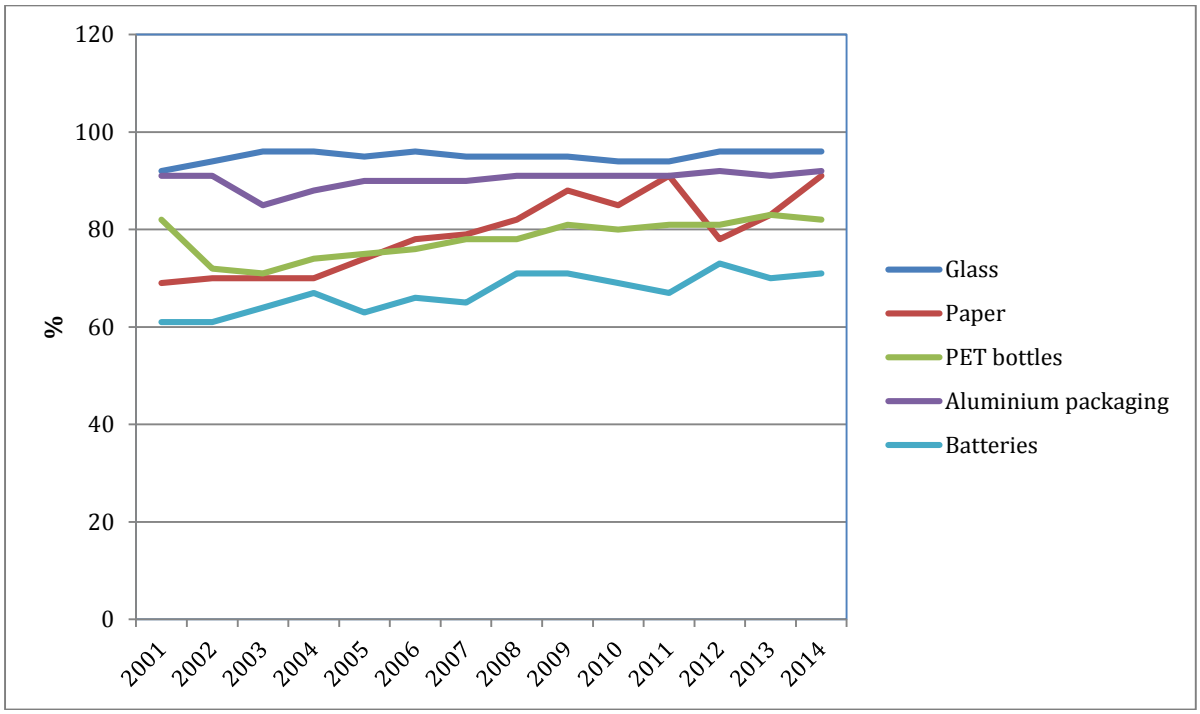
Figure 2.2 shows the recycling rates of selected waste streams in 2001-2014 (FOEN, 2016b). It emerges that, in 2014, recycling rates exceeding 90 % were achieved for glass, paper and aluminium packaging.

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



Source: Eurostat, 2016.

Figure 2.2 Switzerland, recycling of selected waste streams, 2001-2014, per cent



Source: FOEN, 2016b.
Note: recycling rates calculated as share of waste materials collected for recycling related to materials placed on the market in the same year.

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 ([2]). Moreover, 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).

Switzerland is not obliged to meet these targets as the country is neither a member of the European Union nor the European Economic Area. However, based on the recycling rates shown in this paper, which correspond to method 4, Switzerland has been steadily above the 50 % recycling rate since 2005.

2.1.2 Landfilling of biodegradable municipal waste

According to the EU Landfill Directive (1999/31/EC), EU Member States shall reduce the amount of biodegradable municipal waste (BMW) landfilled to 75 % of the total amount of BMW generated in 1995 by 2006; to 50 % by 2009; and to 35 % by 2016. These targets do not apply to Switzerland. Nevertheless, no MSW has been landfilled in the country since 2004 (Eurostat, 2016).

Landfill of combustible waste, including biodegradable fractions has been banned since 2000 (Swiss Confederation, 2010–2011).

Bio-waste collection covers 70–80 % of the population (Ademe, 2013). There are strategic goals to guarantee the quality of compost and increase energy production through anaerobic digestion – about 80 % of the Swiss compost production is provided with a quality label (Ademe, 2013). In Switzerland and Liechtenstein, around 1.26 million tonnes/year of biogenic waste are processed in the countries' 368 composting and anaerobic digestion plants (FOEN, 2016a).

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

Switzerland has not reported regional waste data to Eurostat.

2.1.4 The relationship between landfill tax and recycling levels of municipal solid waste

Switzerland introduced a landfill tax, the so-called VASA-tax, in 2001, which is a federal tax applied in all cantons (ETC/SCP, 2012; ETC/SCP, 2009).

According to the VASA Ordinance (Swiss Federal Council, 2009), since January 2009, different tariffs are applied: CHF 15 (EUR 13.48) per tonne for bio-reactive landfill; CHF 17 (EUR 15.28) per tonne for stabilised residues landfill; CHF 3 (EUR 2.70) per tonne for inert materials landfill; and CHF 22 (19.78 EUR) per tonne for export for underground storage. From January 2017, the same tariff (of CHF 16 CHF (EUR 14.38) per tonne will apply to bio-reactive and residue landfills, and CHF 5 (EUR 4.49 EUR) per tonne for inert material landfill (Swiss Federal Council, 2016). In 2014 and 2015, the tax generated around CHF 40 million (EUR 35.94 million) in revenues (FOEN, 2016c)[3].

[2] 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 [this is the method used in this document]

[3] Calculated with the following exchange rate: 1 EUR = 1.11284 CHF (03.02.2016)

As indicated, landfill of combustible waste including biodegradable waste has been banned since 2000, and since 2004, no municipal waste has been landfilled. The Swiss landfill tax, therefore, has no influence on the landfill rate of municipal waste and should therefore not be compared to MSW landfill and recycling rates. The purpose of the tax is to generate revenues for the investigation, monitoring and remediation of polluted sites and the investigation of sites that were not found to be polluted .

Since 2010, also the waste exported for recovery or treatment is subject to the landfill tax if it is to be landfilled abroad after treatment and the amount of landfilled waste is more than 15 % of the exported waste by weight. This is to make sure that the export of waste is not financially more attractive than landfilling in Switzerland and, in fact, the ETC/SCP found that this landfill tax did not result in the increased export of waste (ETC/SCP, 2012). The export of waste for landfilling abroad is prohibited by law, except for underground storage.

2.2 Uncertainties in the reporting

Some uncertainties or differences in the reporting of MSW can result in different levels of recycling, for example regarding inclusion of packaging waste in recycled MSW and the methodology of reporting on MSW sent to mechanical-biological treatment (MBT). However, no data is available from Switzerland for packaging recycling and MBT, therefore it is not addressed here.

2.3 Important initiatives taken to improve municipal solid waste management

The responsibilities for waste management are shared between three administrative levels in Switzerland: the federal state, the 26 cantons, and around 2 800 municipalities. The Federal Office for the Environment (FOEN) is responsible for developing legislation and policies to ensure the recovery and environmentally sound disposal of waste, controlling the import and export of waste, and coordinating the planning of waste disposal facilities. The cantons and municipalities are responsible for the implementation of the policy framework.

Waste management was regulated by the Technical Ordinance on Waste (TOW), which was adopted in 1990 and subject to a number of amendments. This Ordinance was completely revised by the new Ordinance on Waste Prevention and Disposal of 4 December 2015, which entered into force on the 1 January 2016. Compared to the TOW, the new Ordinance is more focused on waste prevention and recycling; in particular, it provides for the material or organic recycling of biogenic waste under specified conditions. Other relevant legislation includes:

The Beverage Containers Ordinance of 5 July 2000 established an obligatory deposit and refund scheme for refillable containers and for non-refillable polyvinyl chloride (PVC) containers of not less than CHF 0.30 ([4])in either case. The Ordinance also introduces a disposal fee for glass beverage containers of between CHF 0.01 ([5]) and CHF 0.10 ([6]) to be pre-paid to a fee organisation appointed by FOEN by manufacturers who supply empty glass beverage containers for use within the country and importers of both empty and filled glass beverage containers.

- ✓ The Ordinance on the Return, Taking Back and the Disposal of Waste Electrical and Electronic Appliances of the 14 January 1998 requires retailers, manufacturers and importers to take WEEE back free of charge. Manufacturers and importers impose the Advance Recycling Fee (ARF) on equipment sold in Switzerland, which is then passed on in full to finance WEEE collection and treatment to the following organisations: Swico Recycling, covering office, informatics, consumer electronics, communication, graphics industry and measurement and medicine technology areas; the SENS Foundation for domestic equipment; and the Swiss Lighting Recycling Foundation for lights and light fittings.

[4] 0.27 EUR. 1 EUR = 1.11284 CHF (03.02.2016).
[5] 0.09 EUR. 1 EUR = 1.11284 CHF (03.02.2016).
[6] 0.09 EUR. 1 EUR = 1.11284 CHF (03.02.2016).

- ✓ Annex 2.15 of the 2005 Ordinance on the Reduction of Risks Posed by Chemicals requires traders and manufacturers that supply portable batteries to take them back from consumers free of charge at every sales point and introduces a pre-paid disposal fee for batteries placed on the market. The Ordinance on the Pre-Paid Disposal Fee for Waste Batteries and Accumulators of the 28 November 2011, with reference to the 2005 Ordinance, regulates the fee to cover the cost of the collection, transport, and recycling of waste batteries. The fee of between CHF 0.50[7] and CHF 3.20[8], set by the federal authorities based on the battery type and weight, is included in the purchase price. The organisation for the disposal of batteries, Interessenorganisation Batterieentsorgung (INOBAT), levies, administers and spends the pre-paid disposal fee on behalf of FOEN.

There are no national waste plans at the federal level. Cantons have to draw up their own management plans and review them periodically. The Ordinance on Waste Prevention and Disposal defines the content of waste management plans. The cantons have to submit the plan to FOEN, for conformity assessment.

In contrast with other countries with high recycling rates, national legislation does not generally set specific targets for recycling. Recycling targets have only been set by the Ordinance for Beverage Containers, 75 % for each material, with the agreement of most of the suppliers of these products (OECD, 2004).

Currently more than half of all MSW is separately collected. Separate collection of waste paper and cardboard has been supported by a framework agreement for the financing of the collection (ETC/SCP, 2009) by establishing a purchase guarantee and minimum price for the used paper collected by municipalities.

Positive results from MSW separate collection can be attributed, among other things, to the introduction of a refuse bag charge in the 1990s, a pay-as-you-throw scheme. In 2015, around 90 % of the Swiss population financed their waste disposal entirely or in part though volume-based charges; the remaining 10 % is financed though taxation or payment of a flat fee (Switzerland, 2016). At the same time, more easily reachable collection points were created.

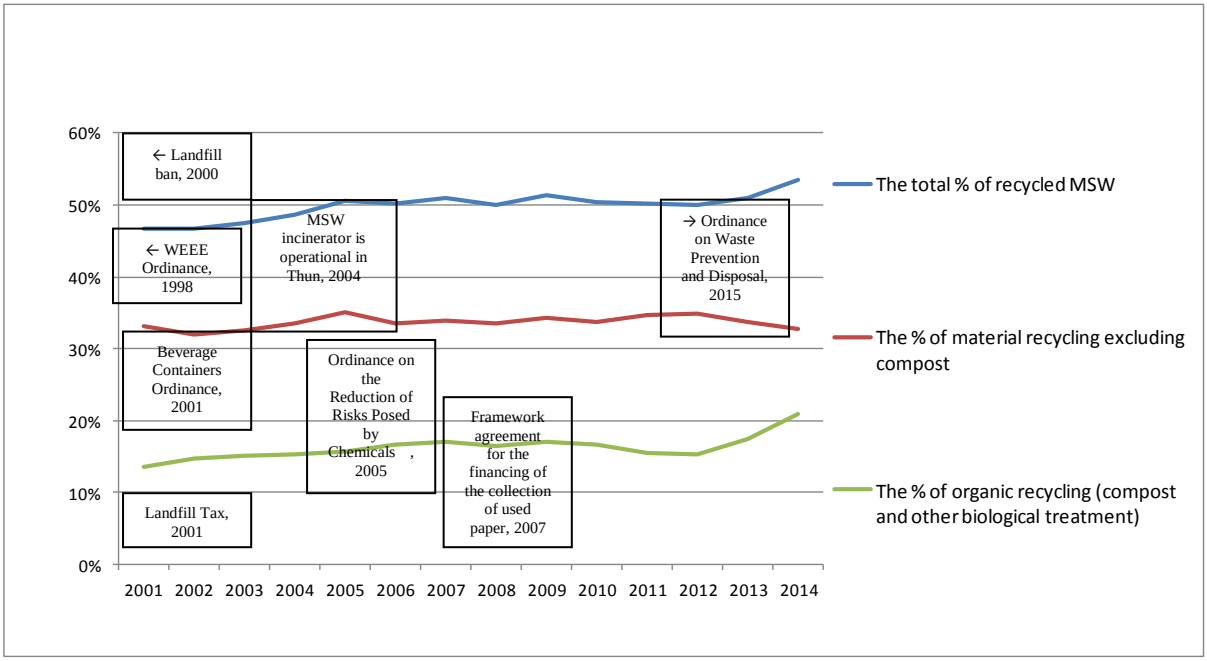
Switzerland has a well-developed network of waste management facilities. Virtually every region possesses the infrastructure required to dispose of its own waste (Swiss Confederation, 2010-2011).

Bio-waste collection covers 70–80 % of the population (Ademe, 2013). In Switzerland and Liechtenstein, around 1.26 million tonnes a year of biogenic waste are processed in the countries' 368 composting and anaerobic digestion plants (FOEN, 2016a).

The amount of waste incinerated in Switzerland has stabilised in recent years and in 2014 stood at approximately 3.48 million tonnes, about 80 % of which is household waste (FOEN, 2016b). Since the instalment of the MSW incinerator near Lucerne in 2015, the total incineration capacity in Switzerland is 4.1 million tonnes, which is sufficient to avoid the landfilling of any combustible MSW, as prescribed by the 2000 landfill ban. All 30 Swiss MSW incinerators have a thermal efficiency coefficient of more than 65 % and use the combustion heat for electricity production or to supply directly to district heating networks and industrial plants and provide around 2 % of Switzerland's energy consumption. Efforts are currently being made to recover metals from the incineration residues, which would greatly improve the environmental impact of the incinerators. Incinerator charges have decreased in recent years and in 2013 were CHF 146 (about 120 EUR[9]) per tonne (FOEN 2015a), which is high compared to the average total cost of MSW incineration – gate fees plus eventual incineration tax – of EU Member States (BIO Intelligence Service, 2012). This is also due to the application of very strict emission control standards.

[7] 0-45 EUR. 1 EUR = 1.11284 CHF (03.02.2016).
[8] 2-87 EUR. 1 EUR = 1.11284 CHF (03.02.2016).
[9] 1 EUR = 1.11284 CHF (03.02.2016).

Figure 2.3 Switzerland, recycling of municipal solid waste and important policy, initiatives, 2001–2014



2.4 Future possible trends

Although Switzerland has slightly increased its recycling rate for municipal waste since 2001, overall, the development in MSW management has been very stable over the period 2001–2014. The landfilling of biodegradable municipal waste is practically zero, which places Switzerland amongst the best performing European countries in terms of the diversion of municipal waste from landfill. Municipal waste generation has increased steadily.

2.5 Existing and planned responses

Switzerland is expecting a change of paradigm, meaning the focus of waste management policy will be switched from the control of waste treatment emissions to closing product cycles. The latter is to be achieved by improved recycling techniques and product design that will contribute to the protection of primary resources (EEA, 2010 and 2011).

In support to this development, an efficiency analysis was commissioned by FOEN to assess the 1986–2004 waste policy and define the main axes of future waste management policy.

It is expected that legislation on chemicals and the development of industrial products will improve the recycling of materials. The process will be supported by increasing costs of raw materials and more efficient recycling technologies. Inefficient recovery and treatment of waste that is not environmentally sound will be prevented by waste legislation. The quality of waste to be landfilled will be improved in order to reduce its environmental impact. On the other hand, new products and chemicals put on the market will demand appropriate treatment technologies and new regulations.

On 8 March 2013 an Action Plan on Green Economy was endorsed at the federal level. It establishes some objectives and measures that are relevant for the management of MSW, such as reducing food waste and increasing the efficiency of waste treatment plants (FOEN, 2015b). In its national report on the environment 2015, the Swiss Federal Council concluded that in the future, more emphasis would be needed to close material cycles, and reduce use of raw materials and the generation of waste (Swiss Federal Council, 2015).

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