Country fact sheet

Municipal waste management

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Iceland

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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

- The high cost of appropriate waste management in Iceland is due to specific geographical and climatic conditions.
- The recycling of municipal solid waste (MSW) has increased steeply since 2009. Recycling has increased from 16 % of generated MSW in 2001 to 19 % in 2008 and further to 30 % in 2014.
- The increase is mainly linked to material recycling, which accounts for more than 70 % of total in 2014.
- The first national waste management plan was introduced in 2004 and a new edition of the plan (2013–2024) was published in 2013.

1 Introduction

1.1 Objective

Based on historical municipal solid waste (MSW) data for Iceland, and EU targets linked to municipal solid waste (MSW) in the Waste Framework Directive (WFD), the Landfill and the Packaging Directives, 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 MSW management;
- assessment of possible future trends.

2 Iceland's municipal solid waste management performance

Iceland is relatively isolated; the shortest distances to the European continent are approximately 1 000 km to Norway and 800 km to Scotland (EEA, 2010). The island covers an area of slightly more than 100 000 square kilometres but the number of inhabitants is only 330 000, of whom 70 % live in the Reykjavik metropolitan area. Iceland has many smaller towns and villages and given the distances between them, waste management infrastructure is rather expensive.

Since the 1970s, Iceland has made considerable progress regarding waste management. The main treatment option in the 1970s was open-pit burning, resulting in many small open dumps in many places emitting smoke. In the 1980s the obvious disadvantages of this practice had been recognized. Many municipalities therefore built burning cisterns, typically concrete boxes that prevents waste from blowing away, but still allows incineration at relatively low temperatures. At the same time, landfilling became more common. In 2000, open-pit burning had gradually been phased out as it was widely considered unacceptable. Instead, landfill became the most usual way of final treatment, but also a few small incineration plants were built, some with energy recovery. With one exception, these incineration plants were,closed in 2011 and 2012. Many of the landfills have also been closed; in 2012–2015 14 landfills, representing almost 40 % of landfills in Iceland, were permanently closed. Furthermore, recycling became a more and more feasible waste management option, as a result of increased cooperation between municipalities. (Environment Agency of Iceland, 2016; Environment Agency of Iceland, 2006)

Local authorities determine the organisation of the collection of municipal waste in the municipalities. They are also responsible for transporting municipal waste and ensure that reception and collection facilities are operational for waste generated in their municipality, where appropriate in cooperation with other local authorities. The total population is served by collections. In general, collection companies working in the waste sector also collect waste from individual institutions and companies. (Environment Agency of Iceland, 2016)

The local authorities are subject to the supervision from the Ministry of the Interior, according to the Local Government Act no. 138/2001. Other actors are subject to the supervision from either the Environment Agency or the Local Health Inspectorates, according to Act no. 55/2003 on Waste Management. This Act authorises the use of certain coercive instruments, laid down within it. (Environment Agency of Iceland, 2016)

Due to the small number of inhabitants in Iceland there is limited economic opportunity for recycling facilities such as paper mills, glass works and plastic factories, but three aluminium factories are situated on the island. Recycling of waste is therefore mostly undertaken outside Iceland. Meanwhile, other types of waste management such as proper landfilling or incineration with tight emission controls are expensive because of the long distances between the place of waste generation and treatment sites.

Due to a very high economic growth in the 1990s and 2000s until 2008, Iceland had a large increase in material consumption and consequently also waste generation. Total waste generation increased by 74 % between 1995 and 2008, while municipal waste increased by 38 % (EEA, 2010). This, however, changed dramatically with the economic crisis in 2008, which was especially severe in Iceland.

Iceland is not a member of the EU. However, Iceland is an EFTA member and has signed the agreement on the European Economic Area. Through this agreement, Iceland has to implement all EU environmental legislation.

Law no. 55 from 2003 on Waste Management was established to address the more stringent demands of waste management. The objective of the law was to decrease the quantity of waste by preventing generation, increasing recycling and recovery, and reducing the quantity of waste deposited in landfills. Regulation no. 737/2003 on the treatment of waste makes the local authorities responsible for the collection, handling and treatment of municipal waste. Several municipalities operate cooperative regionalwaste treatment facilities. In the capital area of Reykjavik this is SORPA, a company owned by several municipalities covering around 65 % of the Icelandic population. (Environment Agency of Iceland, 2006)

New waste management legislation was adopted by the Icelandic parliament in May 2011 and May 2014 with the aim of incorporating a whole range of provisions of EU waste related directives (EC, 2011b). Implementation of Directive 2008/98/EC was largely finished in May and October 2014, including the recycling and recovery targets. (Environment Agency of Iceland, 2016)

The first National Plan for Waste Management 2004–2016, published in 2004, included some quantitative targets for waste management until 2020, and also more general policy targets to reduce waste generation and to decrease waste disposal through reuse and recycling (EEA, 2010). A new National Plan for Waste Management (2013–2024) was published in 2013 (UN-FCCC, 2014). The first National Waste Prevention Programme was published in January 2016 (Environment Agency of Iceland, 2016).

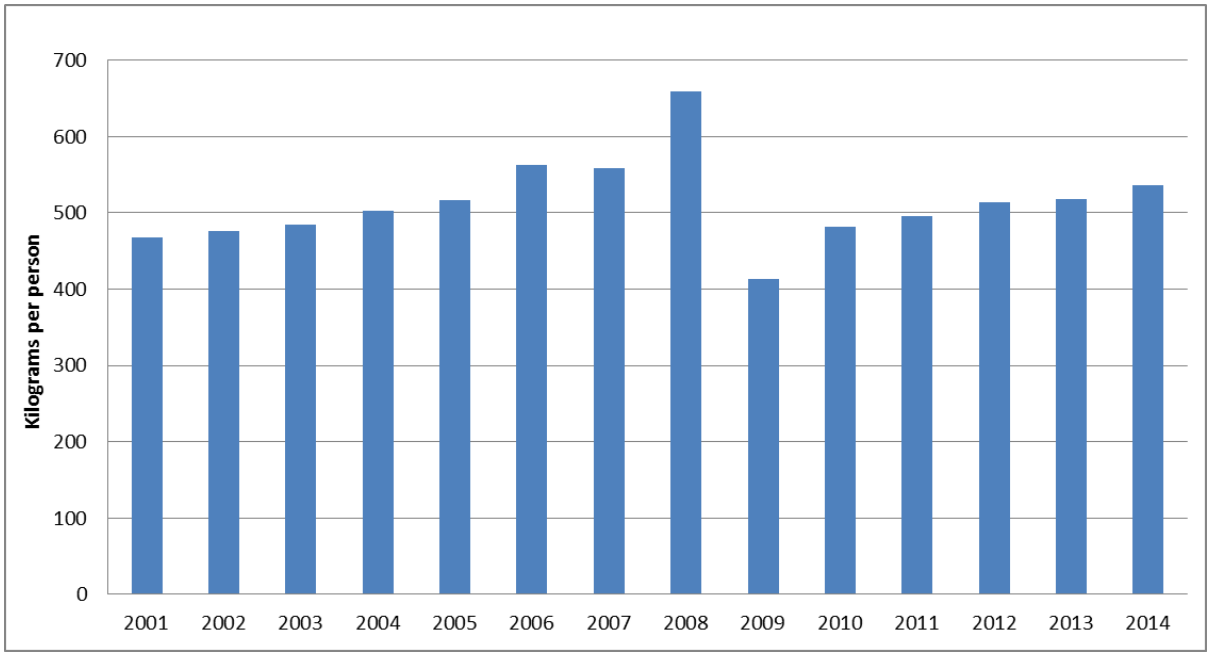
In 2013 Iceland generated 112 000 tonnes of MSW, and the same amount was reported as being treated (Eurostat, 2016).

2.1 Municipal solid waste indicators

The following indicators illustrate the development of Icelandic MSW generation and management in 2001–2013. All percentage figures have been calculated as proportions of generated waste, rather than managed waste.

Figure 2. shows the development of MSW generation per person in Iceland from 2001 to 2014. MSW generation peaked at 659 kilograms per person in 2008, and in 2009 there was a dramatic drop to 413 kilograms which can be linked to the start of the economic crisis. Since 2009 MSW generation has risen steadily reflecting the slow increase in gross domestic product (GDP) as well as a huge increase in tourism – from about 400 000 tourists in 2010 to 1million in 2014 (Environment Agency of Iceland, 2016).

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



Source: Environment Agency of Iceland, 2016 (data for 2008-2014); Eurostat, 2016 (data for 2001-2007).

Previously, the majority of MSW in Iceland was landfilled. In absolute terms, about 100 000 tonnes of MSW were landfilled in 2001 and 117 000 tonnes in 2007. However, due to the generated amount of MSW increasing from 133 000 tonnes in 2001 to 174 000 tonnes in 2007, this represents a reduction in the percentage of MSW landfilled, from 75 % in 2001 to 67 % in 2007. In 2014, 66 % of MSW was landfilled. (Environment Agency of Iceland, 2016)

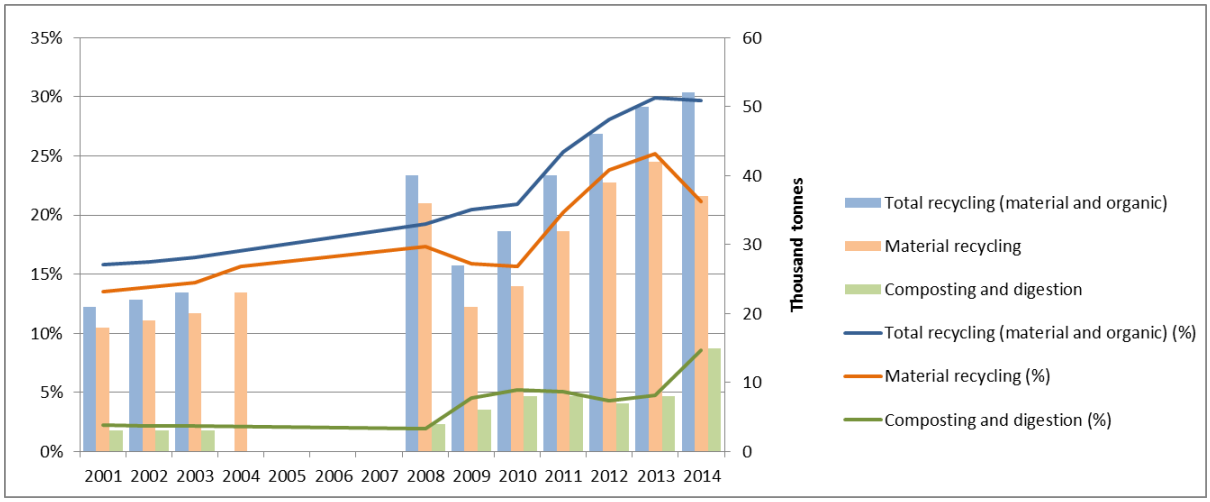
2.1.1 Municipal solid waste recycling, 2001–2014

Figure 2. shows the development of recycling of MSW in Iceland related to total recycling, material recycling and composting and other biological treatment. The figure illustrates a steep increase in the recycling rate as well as in recycled tonnages between 2009 and 2012. The rise has slowed, but the development remained positive in 2012 and 2013. Overall, the recycling rate increased from 16 % to 30 % from 2001 to 2013.

The rise of recycling is primarily caused by an increase from 16 % in 2009 to 21 % in 2014 in material recycling – in absolute terms, from 21 000 tonnes in 2009 to 37 000 tonnes in 2014. From 2009 until 2013, the share of composting and digestion has varied between 6 and 8 %. In 2014 the share increased substantially, to 15 %.

The development of recycling in Iceland shows very good progress since 2009. There are a number of important policy initiatives that have made this possible (Section 2.3). Furthermore, there has been a substantial change in public attitudes towards waste sorting and recycling. This change has partly been driven by the many local authorities that have taken initiatives and set up extensive waste sorting schemes, in cooperation with the companies working in the waste sector. (Environment Agency of Iceland, 2016)

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



Source: Environment Agency of Iceland, 2016 (data for 2008-2014); Eurostat, 2016 (data for 2001-2007).

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]. Through the European Economic Area (EEA) agreement, Iceland has to implement this target and it has been incorporated into Icelandic legislation by Regulation No. 737/2003 (Article 12). Iceland has chosen calculation method 4 which corresponds to the recycling rates shown in this paper. It can be seen from Figure 2.1 that Iceland has a chance of meeting the target, according to method 4, if the efforts on increasing the recycling rate are continued in the coming years. In 2015, the European Commission has 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 Landfilling of biodegradable municipal waste

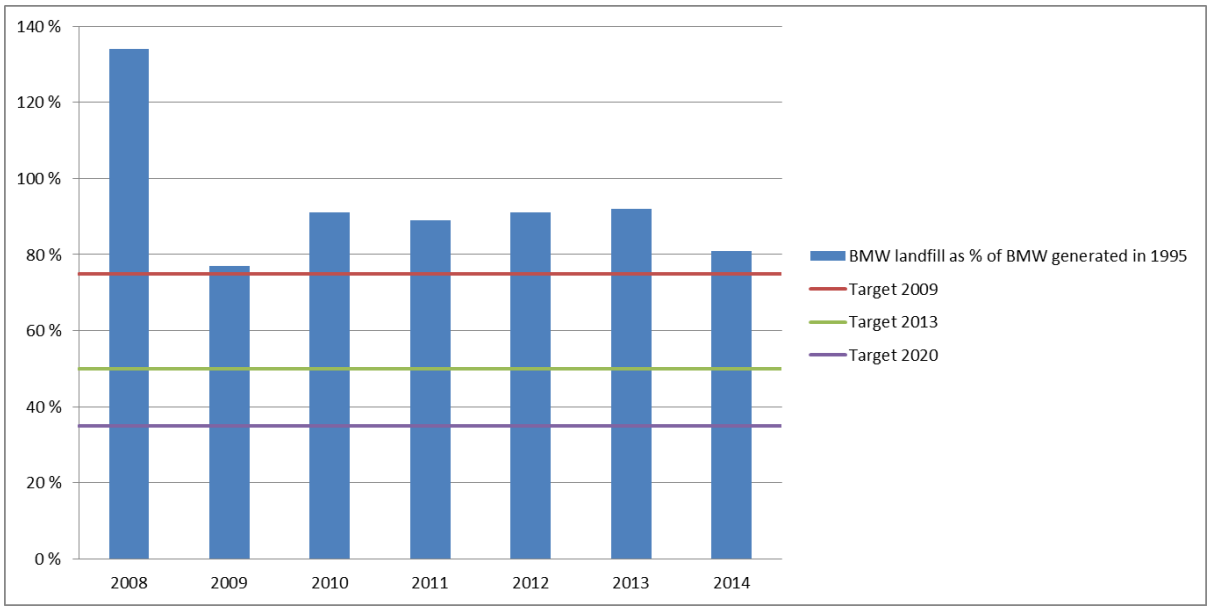
According to the EU Landfill Directive, Member States have to reduce the amount of biodegradable municipal waste landfilled (BMW) by specific percentages by 2006, 2009 and 2016. The targets are related to the amount of BMW generated in 1995. As an EFTA member and having signed the agreement on the European Economic Area, Iceland has to fulfil the requirements in the Landfill Directive. However, Iceland has been given a three year derogation for the first target, and a four year derogation for the other two. The targets in the Icelandic legislation are 2009: 75%, 2013: 50% and 2020: 35%.

[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).

The Environment Agency keeps track of data on BMW landfilled. According to this data, Iceland fulfilled the BMW landfill diversion targets for 2009 and 2013.

Figure 2.2 Iceland, landfill of biodegradable municipal waste, 2006–2014, % of biodegradable municipal waste generated in 1995



Source: Environment Agency of Iceland, 2016.

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

No regional data are available for Iceland.

2.1.4 Recycling and landfill taxes

Iceland does not have a landfill tax.

2.1.5 Environmental benefits of better municipal solid waste management

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

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.

Iceland includes recycling of packaging waste from households in its MSW recycling data. According to an estimate by Environment Agency of Iceland (2016), about 40–50 % of the total material MSW recycling is based on packaging waste. According to Act no. 55/2003 on Waste Management,

municipal waste is defined as "waste from households, for example food waste, paper, cardboard, plastic, garden waste, glass, wood and metals, and identical residues from operators, etc.". Iceland does not include home composting in the MSW recycling statistics (Environment Agency of Iceland, 2016).

There are a few sorting and mechanical treatment plants in Iceland. The outputs of these plants are used for calculation of recycling rates. The amount of waste that does not end up in a final recycling process is considered negligable. (Environment Agency of Iceland, 2016)

2.3 Important initiatives taken to improve municipal solid waste management

The Icelandic government has decided, at least for the time being, not to introduce landfill and incineration taxes. Certain people in Iceland argue that they would merely increase the overall cost of waste treatment and would not have much influence on prevention, reuse, recycling and recovery of waste generated in the country. Instead, Law 162/2002 on Recycling Fees was passed (Environment Agency of Iceland, 2006).

This was followed by the setting up of the Icelandic Recycling Fund (Úrvinnslusjóður – IRF ([2])). A recycling fee is now being levied on the products recognized in the law – certain hazardous waste, end-of-life vehicles, paper and cardboard packaging, plastic packaging, farm silage films, electrical and electronic equipment, fishing gear and tyres, in order to finance collection sites, transport of these wastes from the sites and recycling, recovery or disposal.

The first National Plan for Waste Management 2004–2016, published in 2004, included some quantitative targets for waste management up to 2020, and also more general policy targets to reduce waste generation stepwise and to decrease waste disposal by reuse and recycling (Environment Agency of Iceland, 2006). The targets are related to the targets in the EU Landfill Directive and other EU Directives.

In 2013 a new National Plan for Waste Management, covering the period 2013–2024, was published by the Ministry for the Environment and Natural Resources (UN-FCCC, 2014). The revision was made by consulting various stakeholders including the municipalities (the Association of Local Authorities in Iceland) and the Federation of Icelandic Industries. The ultimate objective of the new edition of the National Plan is the sustainable management of waste. In addition to the revised national waste management plan, a Waste Prevention Programme covering the whole country was established in January 2016. (UN, 2010; Environment Agency of Iceland, 2016)

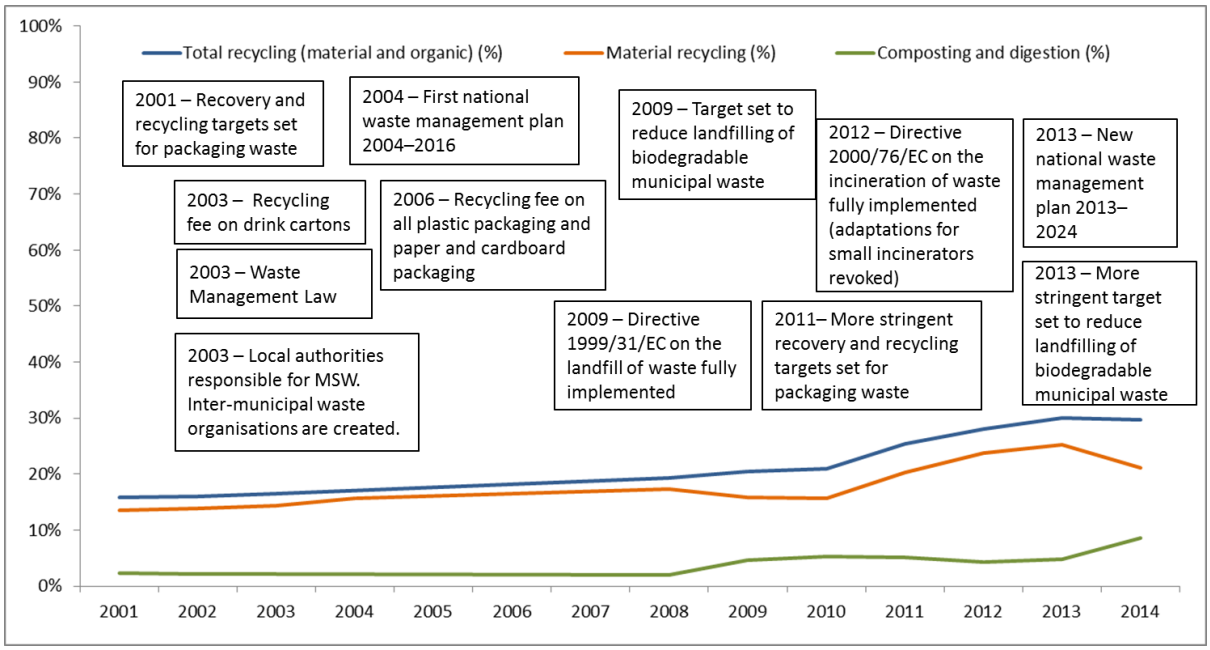
The first National Waste Prevention Programme was published in January 2016, setting waste prevention policies for 2016–2027 with the general objectives of reducing waste generation and improving resource efficiency. In the Programme, the focus is on nine waste/resource categories. There are six categories that will each be a priority for two years – food waste, plastics, textiles, electronic equipment, constructions and paper. There are also three categories that have a long-term focus – by-products from the processing of meat and fish, beverage packaging and waste from heavy industries. (Environment Agency of Iceland, 2016)

The considerable increase in recycling since 2009 has been partly facilitated by a number of implemented policy initiatives, including the recycling fee on all plastic, paper and cardboard packaging (2006), the target set to reduce landfilling of BMW (2009), full implementation of Directive 1999/31/EC on the landfilling of waste (2009), new and more stringent recovery and recycling targets set for packaging waste (2011), full implementation of Directive 2000/76/EC on the

[2] www.urvinnslusjodur.is

incineration of waste (adaptations for small incinerators revoked) (2012), and a more stringent target set to reduce landfilling of BMW (2013). (Environment Agency of Iceland, 2016)

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



Source: Environment Agency of Iceland, 2016 (recycling data for 2008-2014); Eurostat, 2016 (recycling data for 2001-2004).

2.4 Possible future trends

In the last 20 years the management of MSW in Iceland has developed from open burning of waste, through the use of small incinerators and the use of sanitary landfills to recycling. As a consequence of national waste management planning, the sector generally improved in recent years. Due to geographical and climatic conditions, advanced waste management is rather difficult and costly in Iceland. The recent development of recycling in Iceland, however, shows very good progress and Iceland has a chance of meeting the EU's recycling target, if efforts on increasing the recycling rate are continued in the coming years. The landfill of BMW has decreased considerably since 2006 and Iceland has fulfilled two of the three targets set in the national legislation.

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