Abstract While waste amounts are still growing in the EU, there is a clear shift in the waste management options employed to deal with waste. Less waste is landfilled and more is recycled or incinerated with energy recovery. In all, 62% of municipal waste was landfilled in 1995, but that figure had fallen to 40% by 2008. Waste management has a strong influence on the environment by either provoking or preventing impacts; for example, greenhouse gas emissions vary significantly between treatment options. The overall CO₂-equivalent impacts from municipal waste management have in the same period been more than halved. The drivers for this change in waste management have been EU and national policies and legislation that have set up clear targets for recycling and recovery of waste. This article gives an overview of the set targets, the achieved results, and the consequences for greenhouse gas emissions of municipal waste management.

Key words Waste policy · Recycling targets · Landfill Directive · European Union · Municipal waste · Recycling · Greenhouse gas

Introduction

In 2005 the European Union (EU) released its thematic strategy on the prevention and recycling of waste. In this strategy, the EU formulated a vision of “the EU as a recycling society.” This is a very ambitious vision, but also a very necessary one if we want a more sustainable society with less use of virgin materials, less use of energy, and fewer greenhouse gas (GHG) emissions as well as less polluting emissions to soil, water, and air.

As a follow up to the thematic strategy on the prevention and recycling of waste, the EU passed a new Waste Framework Directive in 2008, which includes new initiatives on recycling but also for the first time introduces obligatory initiatives regarding waste prevention.

Today the EU has 27 Member States, but when the first EU initiatives were taken in the waste area more than 35 years ago, the EU had only 9 Western European Member States. Since then, 6 Western European countries joined the EU in the 1980s and the 1990s. The latest extension was in 2004, when 12 new countries, primarily Eastern European countries, joined the EU. The EU waste legislation and its included targets for waste treatment are binding for Member States. In general, big differences have been and are being found in the recycling levels between not only old and new EU Member States but also within individual old Member States and individual new Member States. The introduction of binding EU minimum recycling targets, e.g., for packaging waste, waste electrical and electronic equipment (WEEE), and end-of-life vehicles (ELV), mean that the differences in recycling levels are expected to decrease in the long run. In the past 15 years, EU Member States have in fact succeeded in changing waste management. We recycle more waste now than we did in the middle of the 1990s. There is still a long way to go, but we have made a very solid start.

This article presents and discusses the development of EU waste management policy and the key impacts of this process during the past 15–20 years. It also documents how better waste management can contribute to the reduction of GHG emissions in the EU and so contribute toward fulfilling the GHG reduction targets set out in the Kyoto Protocol. In this way, the article shows the importance of setting political targets for better waste management. It is based on work undertaken by the European Environment Agency and its Topic Centre on Sustainable Consumption and Production during the past 2 years.

EU waste policies before and after 1990

Figure 1 shows the waste management legislation introduced by the EU over the past 35 years. It is reasonable to differentiate between two different periods, the years before
and the years after 1990, because the character of the legislation differs.

EU legislation on waste from 1975 to 1990 was dominated by administrative requirements, for example:

- Member States must make waste management plans,
- EU has to establish a European Waste List and Member States have to transpose it,
- Member States shall ensure that producers, collectors, and processors of waste maintain a record of waste quantities,
- Member States shall ensure that establishments undertaking waste treatment obtain a permit.

Before 1990 no binding waste treatment obligations were introduced by the EU, apart from the obligation to refine waste oil.

However, the period from 1990 to 2008 has been characterized by:

- Introduction of emissions standards and technical requirements for treatment plants (including incineration and co-incinerations plants and landfills),
- Restriction of the quantity of biodegradable municipal waste allowed to be placed in landfills in the period 2006 to 2016, with a possibility of a prolongation period of 4 years,

Even before the EU initiatives, some Member States had already taken national initiatives in order to increase recycling, although this was limited to a few pioneering countries. Most countries were inspired primarily by the initiatives taken by the EU.

Recycling and reuse targets and results in the EU

The main EU recycling and reuse targets are shown in Table 1. Only targets with a deadline of 2006 or later are included. The included targets are related to:

- Type of waste,
- Latest year for implementation,