



European household waste management schemes: Their effectiveness and applicability in England

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Abstract

This paper reviews European household waste management schemes and provides an insight into their effectiveness in reducing or diverting household waste. The paper also considers the feasibility of replicating such schemes in England. Selected case studies include those implemented using variable charging schemes, direct regulation and household incentivisation (reduced disposal charges). A total of 15 case studies were selected from developed countries in the EU where some schemes have operated for more than a decade. Criteria for assessing the effectiveness and replicability of schemes were developed using scheme progress towards targets, response time, compatibility with government policy, ease of administration and operation, and public acceptance as attributes. The study demonstrates the capability of these schemes to significantly reduce household waste and suggests changes to allow their possible adoption in England. One of the main barriers to their adoption is the Environmental Protection Act, 1990 that prevents English local authorities (LAs) from implementing the variable charging method for household waste management. This barrier could be removed through

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a change in legislation. The need to derive consistent data and standardise the method of measuring the effectiveness of schemes is also highlighted.

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1. Introduction

Waste is generated by activities in all economic sectors and often indicates the inefficient use of natural resources (Phillips et al., 2001), loss of materials and energy in production processes and unsustainable consumption patterns (EEA, 2002). Currently in England 67% of municipal solid waste (MSW) generated is landfilled, 9% incinerated and 23.5% recycled or composted (DEFRA, 2006). Results of the latest survey show that in England 29.7 million tonnes of MSW was produced during 2004/2005, which was 2.1% more than that produced in 2003/2004. However, the average annual MSW increase in England is 1.5% from 2000/2001 to 2004/2005. Out of this, 25.7 million tonnes (about 86%) was from households alone (DEFRA, 2006). It has been reported that the amount of total household waste and per capita waste increased by around 15% and 12%, respectively, between 1996/1997 and 2002/2003 (EEA, 2005). However, no further increase in the household waste production was observed until 2004/2005 (DEFRA, 2006). Household waste is mainly comprised of paper and card, kitchen and garden waste. The Waste Strategy 2000, which is currently under review by government, set MSW recycling or composting targets at 33% by 2015 (DETR, 2000). Also, in the UK, the EU Landfill Directive (1999/31/EC) requires the progressive reduction in biodegradable municipal waste to 75% of the 1995 disposal level by year 2010 and 35% reduction by 2020. Therefore, England requires more sustainable and practicable waste management methods to comply with the EU Landfill Directive. Originating in the Waste Framework Directive, a universal waste hierarchy is suggested for developing a sustainable waste management strategy, the elements of which include prevention, reuse, recycling, recovery and disposal (Fiorucci et al., 2003).

Continuous growth in waste quantities is imposing economic and environmental costs on society in most of the European countries for its management (EEA, 2000). The increase in the amount of waste is mainly attributed to the inability of member states to decouple economic growth from waste growth. According to the European Environment Agency (EEA, 2002), only Germany, the Netherlands, Iceland, and to a lesser extent Sweden and Denmark, have been successful in decoupling economic growth and growth in waste production. This decoupling is an objective of the sixth EU Environment Action Programme (2001–2010) (Gervais, 2002).

In Europe, the implementation of the waste hierarchy has become difficult due to complexity and multidisciplinary problems involving social, economic, environmental and technical aspects (Phillips et al., 2001). However, laws have been established by governments at international, national, regional and local levels to facilitate the establishment of challenging targets and to ensure a more sustainable approach to waste management in which less waste is produced and more waste is either reused or value recovered from it. As

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