



# Strategies for local authorities to achieve the EU 2020 50% recycling, reuse and composting target: A case study of England



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## ABSTRACT

The revised Waste Framework Directive requires EU Member States to recycle 50% of their household waste by 2020. This study of 48 English authorities from five regions, between 2008/09 and 2012/13, analysed whether the national 50% target was likely to be achieved by 2020 and also investigated the main barriers and possible solutions for local authorities to attain 50% recycling.

This study identified that England is unlikely to meet the EU target to reuse, recycle and compost 50% of its household waste by 2020. Key issues included central Government support and guidance, and difference in collection systems by high and low rate local authorities.

Key recommendations including structural changes to the collection service including alternate weekly collection for dry recycle and garden waste with a separate weekly collection of food waste, are suggested. Discussion on suggested amendments to the system of measurement are also included.

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## 1. Introduction

The European Union (EU) Waste Framework Directive 2008/98/EC (rWFD) (EU, 2008), outlined an overarching framework of the basic principles and definitions governing the management of waste in Europe. Amongst other factors, it required EU member states to apply the EU Waste Hierarchy, as well as adhere to two recycling and recovery targets by 2020. The targets are: Article 11.2(a) required Member States to reuse and recycle at least 50% of their household waste by 2020, and 70% preparing for re-use, recycling and other recovery of construction and demolition waste. Members failing to transpose a Directive properly can be liable to legal action by the European Commission (EC) (FEUD, 2008). The maximum fine that could be imposed is approximately £517,000 per day, equating to around £256 million per year (TSG, 2014). The EC allowed four methods of calculating the reuse and recycling rate (Hogg, 2014) and the United Kingdom (UK) chose the following method:

$$\text{Recycling rate of household waste in \%} = \frac{\text{Recycled amount of household waste}}{\text{Total household waste amount excluding certain waste categories}}$$

The materials that could be utilised included paper and cardboard, metals, plastic and glass, biodegradable kitchen and canteen waste, biodegradable and non-biodegradable garden and park

waste, wood, textiles and batteries (EU, 2008). With biodegradable material being allowed, the reuse and recycling rate also includes material that can be composted. Thus it will be referred to as the reuse, recycling and composting (RRC) rate.

To meet the requirements of the rWFD, the Department of Environment Food and Rural Affairs (Defra) transposed it via the Waste (England and Wales) Regulations 2011 (WR2011) which were subsequently amended in 2012 and 2014. England's RRC rate had been steadily increasing since 2000/01, but slowed up to the end of 2012/13 at 43.2% (Defra, 2013a).

The main aim of this project was to investigate the major barriers facing English local authorities (LAs) trying to improve their RRC rates and to assess what factors might have contributed to 'significant' variations in the rate. Significance was determined by a positive (or negative in the case of waste arisings) annual tonnage change over a chosen percentage threshold, in a number of categories from 2008/09 to 2012/13.

## 2. The RRC rate in England

The UK needs to achieve a yearly average percentage point increase of approximately 1% between 2010 and 2020, to reach the 50% target (EEA, 2013; WRAP, 2014a) predicted that England

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will need to recycle an additional 1.7 million tonnes before 2020 to meet the target. In 2012/13, only 73 out of 352 English authorities achieved a 50% RRC rate (Defra, 2013a). Across the rest of the UK, the RRC rates were Scotland: 41.2% (MRW, 2013), Northern Ireland: 39.7% (NIEA, 2013), and Wales: 52% (Welsh Government, 2014).

There have been conflicting views, including from Government, as to whether England would meet the target, with some saying yes (Defra, 2013b; EEA, 2013), and others no (Parliament, 2014a; Hogg, 2014; Resource, 2014). For example, Defra (2013b) argued that the most statistically and economically robust forecasting approach was the seasonal auto-regressive integrated moving average (SARIMA) method. This approach forecasted an average amount of 22.6 million tonnes of household arisings in 2020, a rate of 51%, therefore meeting the target. Alternatively, Hogg (2014) argued that the target would not be met as the legislation did not include statutory recycling targets or the ability to introduce 'pay as you throw' (PAYT). Similarly, Parliament (2014a) claimed that meeting the target would be difficult due to the removal of statutory targets and the reduction of LA's budgets.

## 2.1. The role of central and local government

### 2.1.1. Central government

In 2013, Government stated that it would be stepping back from waste management areas where businesses were better placed to act and where there was no clear market failure (Defra, 2013c). However, the Environment, Food and Rural Affairs (Efra) Committee (Parliament, 2014) argued that England would not meet the 50% target unless there is clear leadership and renewed policy drivers from Defra. These drivers should include statutory recycling targets for LAs with the requisite funding support, improved householder engagement, Defra continuing to take a leading role, and the Minister responsible having responsibility across all Government departments. Beasley Associates et al. (2011) also concluded that there was an absence of targets and an over-reliance on voluntary agreements.

### 2.1.2. Local government

Defra (2007) introduced a waste strategy. This included a national indicator (NI 192) to measure the percentage of household waste arisings sent for reuse, recycling, composting or anaerobic digestion, and to be monitored by authorities in England and Wales. However, it was abolished in March 2011, thus reducing LA accountability for the RRC rate.

A key challenge to LAs came from the rWFD which required them to collect paper, metals, plastics and glass separately where doing so is 'necessary' and technically, economically and environmentally practicable (TEEP), from 1st January 2015 (EU, 2008; Defra, 2012).

Street sweepings to collect leaf litter for composting were previously included in the RRC rate calculation. However, following a trial in 2013 they were not allowed to be included in English and Welsh figures, due to contamination from toxic substances (EA, 2013). This change had an adverse impact on the RRC rate as the street sweepings total tonnage in 2012/13 was 1.15 million tonnes (WasteDataFlow, 2014).

## 2.2. Householder influencing factors

### 2.2.1. Socio-psychological constructs

The degree of ease of recycling is critical and is linked to the type and design of the collection scheme, the materials being recycled, convenience, time and the level of change of existing behaviours required (Perrin and Barton, 2001; Tonglet et al., 2004; Barr and Gilg, 2005; Defra, 2008a,b). Householders also appreciate knowledge and feedback regarding the collection system (Martin et al.,

2006; Timlett and Williams, 2008). Recycling is directly linked to householder attitudes (Tonglet et al., 2004) and over time, they can become habitual, although transience can cause them to decline (Timlett and Williams, 2008; Thomas and Sharp, 2013). Research in the UK illustrated different types of householder recyclers, ranging from 'positive greens', to 'stalled starters' (Defra, 2008a; WRAP, 2008).

### 2.2.2. Communications

For collection schemes to work effectively householders must understand what the scheme involves and what their obligations are. This can only be done with effective communications. The method of communication can vary (e.g. local or national campaigns, targeted to specific groups of householders or towards a specific element (e.g. waste prevention)) (WRAP, 2009).

Direct house to house publicity of LA opportunities can have a demonstrable positive effect (Robinson and Read, 2005). Mee et al. (2004) concluded that authorities should use standard communications to design campaigns and that this should be done with trained staff and not generalists.

### 2.2.3. Collection methods

A range of collection systems are required to meet the varying circumstances within which authorities provide recycling services, and to maximise value recovery (WRAP, 2010; Shaw et al., 2006; Green Alliance, 2014).

Lane and Wagner (2013) argue that there is no single recycling container in terms of size, colour or type that can maximise householder participation or recycling rates. The choice depends on the unique characteristics of the collection area, balanced with costs. Abbott et al. (2011) found an inverse relationship between the frequency of the residual waste collection (particularly for organic waste) and the recycling rate.

Alternate weekly collection (AWC) is the most popular form of household waste collection in England (Parliament, 2013; Parfitt and Bridgewater, 2011). AWC allows residual waste destined for landfill or energy from waste (EfW) to be collected on one week and material for recycling collected the next. AWC of co-mingled dry recyclates can have a positive impact on recycling rates and reduce waste arisings.

There are three main methods of collecting dry recyclates for recycling from households. Multi-stream collections generally have a separate receptacle for paper/cardboard, plastic, metals and glass whilst twin-stream collections have separate receptacles for paper and cardboard (fibre), metals, plastics and glass. Co-mingled collections generally collect all of these materials in one container, which is then sent to a materials recovery facility (MRF) for mechanical and manual sorting (WRAP, 2010). There is no consensus regarding which dry recyclate collection system is the most cost effective, with debate for (WYG Environmental, 2012, 2013) and against co-mingled collections (WRAP Cymru, 2011; Williams and Cole, 2013).

Generally garden waste is collected separately, with the most popular method in England being in a 180–240l capacity wheeled bin. Where household food waste is collected, the most popular method is a 7l kitchen caddy which is then deposited into a sack or bin (e.g. a kerbside caddy or 180–240l wheeled bin) (WRAP, 2014b).

### 2.2.4. Urbanisation and socio-economics

Views on collection types and urbanisation vary. For example, Dahlén et al. (2009) noted that the amount of household waste was higher in urban areas and that no difference occurred in the weight of dry recyclates from householders when weight based charges were applied. However, Hage and Soderholm (2008) note

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