

## Pay-by-weight waste charges: worth the weight?

08 June 2017

This *L&RS Note* provides a background to Irish and European Union (EU) waste management law and policy. As waste is a large, technical and complex area, this research paper will focus on waste law and policy relevant to municipal waste, which includes household waste.

This research paper sets out EU waste law and policy, which directly or indirectly impacts on national waste law and policy relating to household waste charges. In particular, it discusses the following:

- **Section 1** introduces this Note.
- **Section 2** summarises EU waste law, including the Waste Framework Directive establishing a general waste management framework. It also sums up recent EU policy concerning waste.
- **Section 3** sets out Irish waste law and policy, and provides an overview of the Irish waste market and waste charges.
- **Section 4** looks at the changes proposed to Ireland's waste collection charging system in 2016 and the suspension of the introduction of that system.

The L&RS also has an In Focus page on 'Waste management in Ireland' (available [here](#)).

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## 1. Introduction

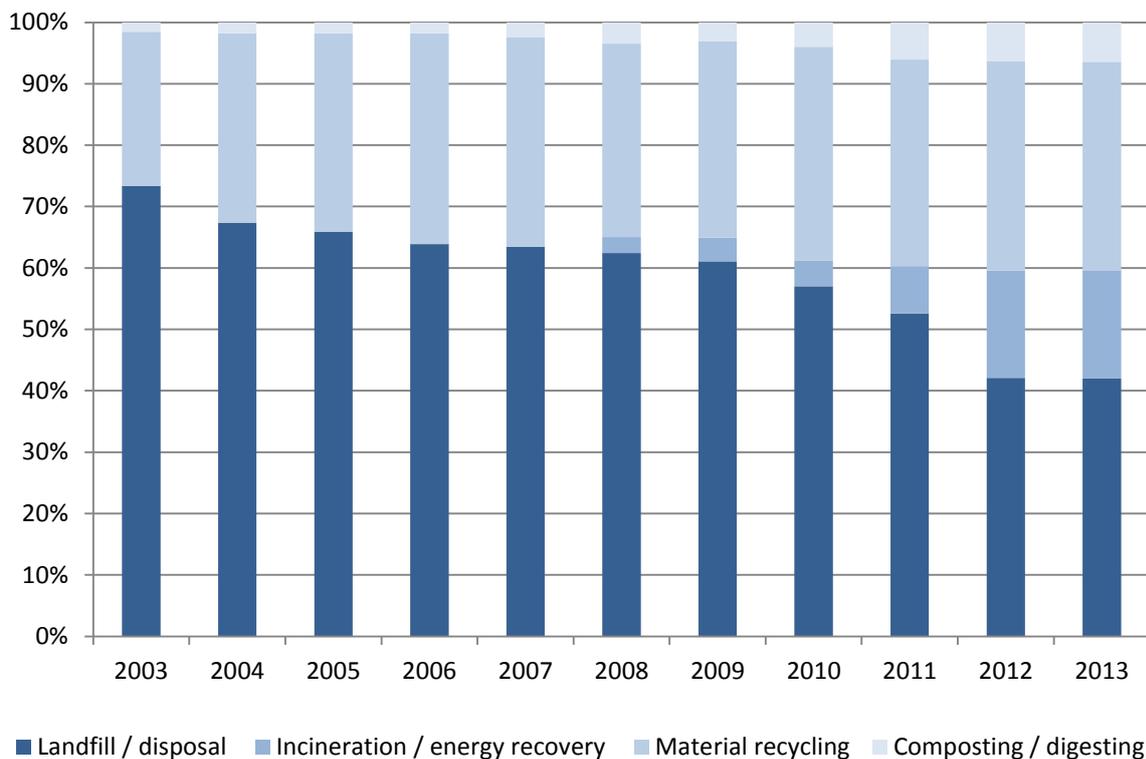
In Ireland the average amount of municipal waste generated in 2013 was 586 kg person, 531 kg per person of that was treated.<sup>1</sup> The following is a breakdown of how that waste was treated:

- 42% was landfilled (compared to an EU average of 31%).
- 34% was recycled (compared to an EU average of 28%);
- 6% was composted (compared to an EU average of 15%);
- 18% was incinerated (compared to an EU average of 26%).<sup>2</sup>

The Irish average was 18% higher than the EU average of 481 kg person.

As required by EU law, the amount of municipal waste being landfilled in Ireland has been decreasing. Chart 1 illustrates how municipal waste was treated in Ireland from 2003 to 2013.

**Chart 1: Municipal waste treatment statistics for Ireland 2003 - 2013**



**Source:** Eurostat, Municipal Waste Statistics (available [here](#))

Poor waste management is damaging for the environment. It contributes to soil and water pollution, climate change and air pollution. Landfilling of bio-municipal waste, e.g. food waste, results in high methane emissions (methane is a potent greenhouse gas).<sup>3</sup>

Waste is not only an environmental issue but also has economic and social impacts. For example, poor waste management is a potential source of odour nuisance<sup>4</sup> and can be harmful to public health and safety.<sup>5</sup>

The waste management industry is a noteworthy portion of the Irish economy. A 2012 “[Regulatory Impact Analysis on household waste collection](#)” (RIA) by the then Department of Environment, Community and Local Government (DECLG) estimated the Irish waste management market to have an annual turnover of at least €500 million. The household waste collection market was estimated to be worth at least €250 million annually.<sup>6</sup>

## European Union

The EU has taken concrete measures to reduce the amount of municipal waste generated and disposed of in landfills (see section [2](#)). These include adopting the waste hierarchy and setting down waste management principles such as the polluter pays principle (see section [2.1](#) and [2.2](#)). In addition specific waste reduction targets were established such as landfill targets for reducing the amount bio-municipal waste being landfilled (see section [2.3](#)). Complying with EU waste obligations directly affects national waste management policy.

Traditionally the topic of waste has carried with it negative associations.<sup>7</sup> However, waste is increasingly being viewed in more positive terms, e.g. as a resource. Recent EU policy has focused on adopting measures to make the EU resource efficient (see section [2.4](#)).

## Pay-by-use waste charges

Studies have shown that the introduction of pay-by-use (PBU) charges reduce the amount of waste that is generated, and divert waste from landfill towards alternative treatment methods such as recycling (see section [3.4](#)). A crucial factor for the successful implementation of variable waste charges is the availability of alternative waste management options.

Pay-by-use charges impact consumer behaviour by acting as a continual incentive to generate less waste, and to divert waste from landfills in order to reduce household waste bills. Research has shown that diverting waste to cheaper alternative waste treatment methods can yield savings in households’ waste bills (see section [3.4](#)).

Although PBU charges are seen as being more equitable, research in the United States into PBU charges found that disadvantaged residents need special assistance through public information and education programmes to maximize cost-saving opportunities (see section [3.5](#)).

Research on PBU charges in Ireland found that pay-by-weight charges are more effective at protecting the environment than other PBU systems. Under the Waste Management (Collection Permit) (Amendment) Regulations (2016) every household in Ireland would have moved to a per kilogram pay-by-weight charging system. The per kilogram pay-by-weight charging system was subsequently suspended (see section [4](#)).

## 2. European Union waste law and policy

The EU has adopted a number of directives regulating waste, for example, on landfilling, end of life vehicles, packaging waste, batteries, etc. The key piece of legislation is the Waste Framework Directive ([Directive 2008/98/EC](#) on waste).

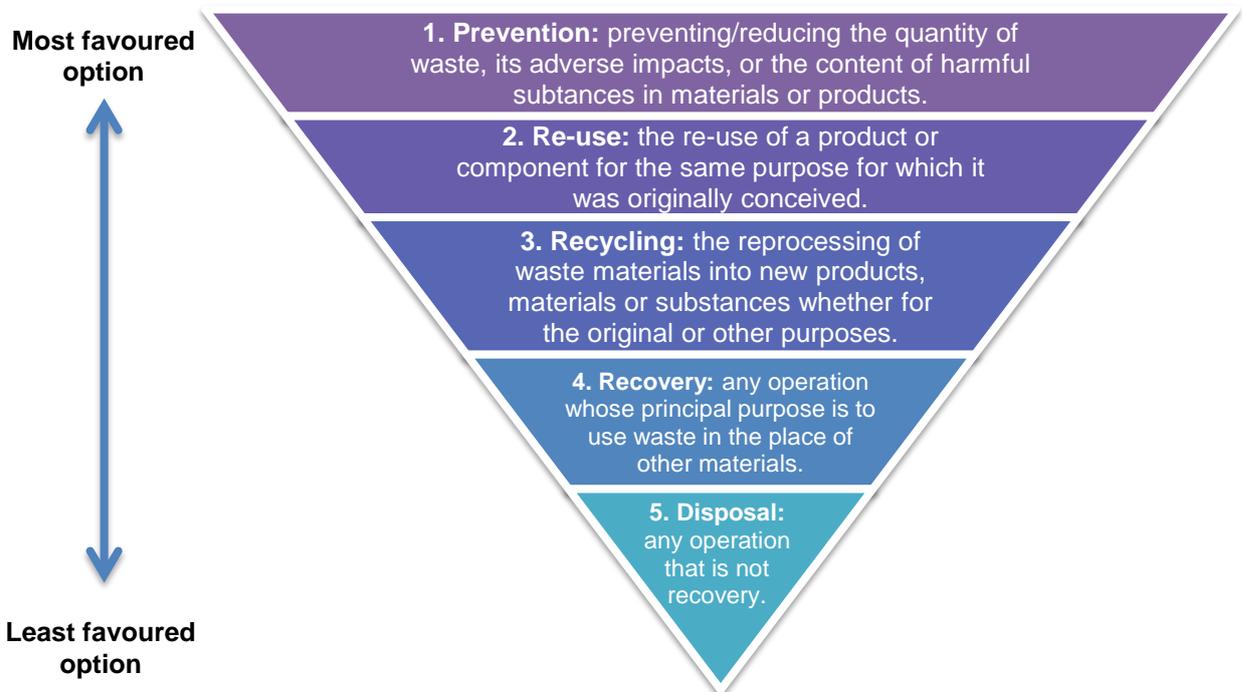
The Waste Framework Directive establishes a general waste management framework. The aim of the Directive is to protect the environment and human health by reducing the harmful effects of waste generation and waste management.<sup>8</sup>

### 2.1 Waste hierarchy

The cornerstone of EU waste law and policy is the ‘waste hierarchy’, as set down in the Waste Framework Directive. The European Commission “[Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste](#)” explain that the primary purpose of the waste hierarchy is “to minimise adverse environmental effects from waste and to increase and optimise resource efficiency in waste management and policy”.<sup>9</sup>

The waste hierarchy sets down, in order of priority, five methods for managing waste. The waste management options are: (1) prevention; (2) re-use; (3) recycling; (4) recovery; and (5) disposal. Diagram 1 illustrates the waste hierarchy.

**Diagram 1:** Waste hierarchy



**Source:** Library & Research Service

Article 4 of the Waste Framework Directive requires the application of the waste hierarchy in waste prevention and management legislation and policy. Article 4 of the Directive also provides that when applying the waste hierarchy, Member States must “take measures to encourage the options that deliver the best overall environmental outcome”. This includes deviating from the waste hierarchy for specific waste streams where this is justified by life-cycle analysis.

Prevention and re-use are concerned with preventing the generation of waste. Recycling, recovery and disposal are concerned with the treatment of waste once generated. Table 1 summarises the variety of waste management options.

**Table 1: Summary of waste management options**

| Management option                  | Summary of waste management option  |
|------------------------------------|---|
| <b>Prevention and minimisation</b> | Prevention and minimisation aims to reduce waste at source, thus eliminating the need to handle, transport, treat and dispose of waste.   |
| <b>Recycling</b>                   | <p>Recycling is the recovery and reprocessing of dry materials including paper, cardboard, plastics, glass, steel and aluminium cans from the waste stream for incorporation into new uses.</p> <p>Recyclable materials are separated at source by householders with kerbside collection by waste management companies. Glass is usually brought to bring banks/civic amenity centres by householders for recycling.</p>  |
| <b>Composting</b>                  | Composting is the biological treatment of food and green (kitchen or garden) waste, which is processed into new products such as compost. Composting is a biological process in which organic matter is consumed through microbial activity, in the presence of oxygen (aerobic) to produce a peat-like humus. The chief objectives of composting household waste are to divert solid waste from landfill; stabilize organic material; and produce a compost / soil fertiliser.   |
| <b>Anaerobic Digestion (AD)</b>    | Anaerobic Digestion (AD) is a biological process using microbes to break down organic material (food and green waste) in the absence of oxygen (anaerobic). Digestion takes place in a special reactor, or enclosed chamber, where critical environmental conditions, such as moisture content, temperature and pH levels, can be controlled to maximize microbe generation, gas generation, and waste decomposition rates. AD is a net energy-producing process and the end products are a soil fertiliser and gas, which can be used to generate heat and/or electricity. |
| <b>Incineration</b>                | Incineration is the burning of residual waste at a temperature greater than 850°C, resulting in an inert ash. Incineration residue typically constitutes 10% of the volume of the original waste thereby enabling a 90% diversion of residual waste from landfill. The heat generated during the incineration process can be converted to electricity.  |
| <b>Disposal</b>                    | Disposal is the least favoured option under the waste hierarchy. It is the disposal of untreated residual waste to landfill.  |

Source: Compiled by L&RS

Table 2 provides an overview of the different types of waste and a definition of each.

**Table 2: definitions for different types of waste**

| Type of waste                              | Definition   |
|--|--|
| <b>Biodegradable</b>                       | Biodegradable waste means waste that is capable of undergoing anaerobic or aerobic decomposition, such as food and garden waste, paper and cardboard, etc.   |
| <b>Biodegradable Municipal Waste (BMW)</b> | Biodegradable Municipal Waste (BMW) is the biodegradable component of municipal waste, not including bio-stabilised residual waste. Biodegradable municipal waste is typically composed of food and garden waste, wood, paper, cardboard and textiles. |
| <b>Biodegradable Content</b>               | Biodegradable Content means the percentage content of waste, which is biodegradable.   |
| <b>Commercial waste</b>                    | Commercial waste is the waste that is produced from a number of diverse sources, including shops, offices and commercial premises, such as paper and cardboard, plastics, organics and glass etc.  |
| <b>Household waste</b>                     | Household waste is waste produced within the confines of a building or self-contained part of a building used for the purposes of living accommodation.  |
| <b>Municipal Solid Waste (MSW)</b>         | Municipal Solid Waste (MSW) means household waste as well as commercial and other waste, which, because of its nature or composition, is similar to household waste. It excludes municipal sludges and effluents.                                      |
| <b>Residual Waste</b>                      | Residual Waste means the fraction of collected waste remaining after a treatment or diversion step, which generally requires further treatment or disposal.  |

**Source:** Environmental Protection Agency (2010), “*Surveys of Residual Waste from Businesses provided with Organic Waste Source Separated Collection Systems*” (available [here](#))

## 2.2 Waste principles

In addition to the waste hierarchy and requiring that waste is managed without endangering human health and harming the environment,<sup>10</sup> the Waste Framework Directive sets down some basic waste management principles.

### General environmental principles

Article 4 of the Waste Framework Directive requires the general environmental principles of precaution and sustainability, technical feasibility and economic viability, and protection of resources be taken into account in waste prevention and management law and policy.

### **Polluter pays principle**

The polluter pays principle, first adopted by the EU in 1973,<sup>11</sup> is a key principle of EU waste law and policy. Article 191(2) of the Lisbon Treaty provides, amongst other things, that the polluter should pay. Under the polluter pays principle, the person who causes pollution should be responsible for paying for the cost of the damage.<sup>12</sup>

Article 14 of the Waste Framework Directive provides that in accordance with the polluter pays principle, the costs of waste management must be borne by the original waste producer or by the current or previous waste holders. The principle applies across all waste streams.<sup>13</sup>

### **Principles of self-sufficiency and proximity**

Article 16 of the Waste Framework Directive sets down the principles of self-sufficiency and proximity. It requires Member States to take appropriate measures to establish a network of waste disposal and recovery installations, taking into account geographical circumstances and the need for specialised installations. This is to enable the EU as a whole and Member States individually to become self-sufficient in waste disposal and recovery.

### **Extended producer responsibility**

Implementing the requirements of the waste hierarchy and the polluter pays principle, Article 8 of the Waste Framework Directive sets down the concept of extended producer responsibility. Article 8 provides that Member States may provide that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products ('producers') has extended producer responsibility. Under extended producer responsibility producers are responsible, financially and/or operationally, for collecting or accepting used products and for recycling those used products.<sup>14</sup>

## **2.3 Waste Targets**

Many of the EU's directives regulating waste provide specific targets for reducing waste. The method for achieving the waste targets is left to the discretion of the individual Member State. The two most relevant waste targets for municipal waste are recycling targets and landfill targets.

### **Recycling targets**

The Waste Framework Directive imposes binding targets on Member States to increase the amount of municipal waste being recycled. The Directive sets a 50% recycling target for certain municipal waste, e.g. household derived paper, metal, plastic and glass by 2020.

In addition to the 50% recycling target under the Waste Framework Directive, the European Commission in the Circular Economy Package (see section [2.4](#)) has proposed to amend the Directive to include the following additional recycling targets for municipal waste:

- 60% recycling target by 2025;
- 65% recycling target by 2030.<sup>15</sup>

As of 2012 Ireland was recycling 45% of household derived paper, metal, plastic & glass and is on track to meet the 2020 50% recycling target.<sup>16</sup>

## Landfill targets

Landfilling is the least desirable method of handling waste under the waste hierarchy and should be limited to the minimum amount necessary.<sup>17</sup> Landfilling is regulated by the under the Landfill Directive ([Directive 1999/31/EC](#) on the landfill of waste).

The objective of the Landfill Directive is to prevent or reduce as far as possible the negative impacts from landfilling on the environment, in particular on surface water, groundwater, soil and air and on human health. It aims to achieve its objective through the introduction of stringent operational and technical requirements on landfills and waste going to landfill.

The Landfill Directive imposes binding targets on Member States to reduce the amount of bio-municipal waste, e.g. food waste sent to landfill. Article 5 of the Landfill Directive set specific targets for the diversion of bio-municipal waste from landfill. Bio-municipal waste being landfilled must have been reduced by:

- 75% on 1995 levels by 2006;
- 50% on 1995 levels by 2009;
- 35% on 1995 levels by 2016.

The Directive provided a derogation for Member States who landfilled more than 80% of their bio-municipal waste in 1995. Under the derogation, Member States could postpone the attainment of these targets by up to four years.

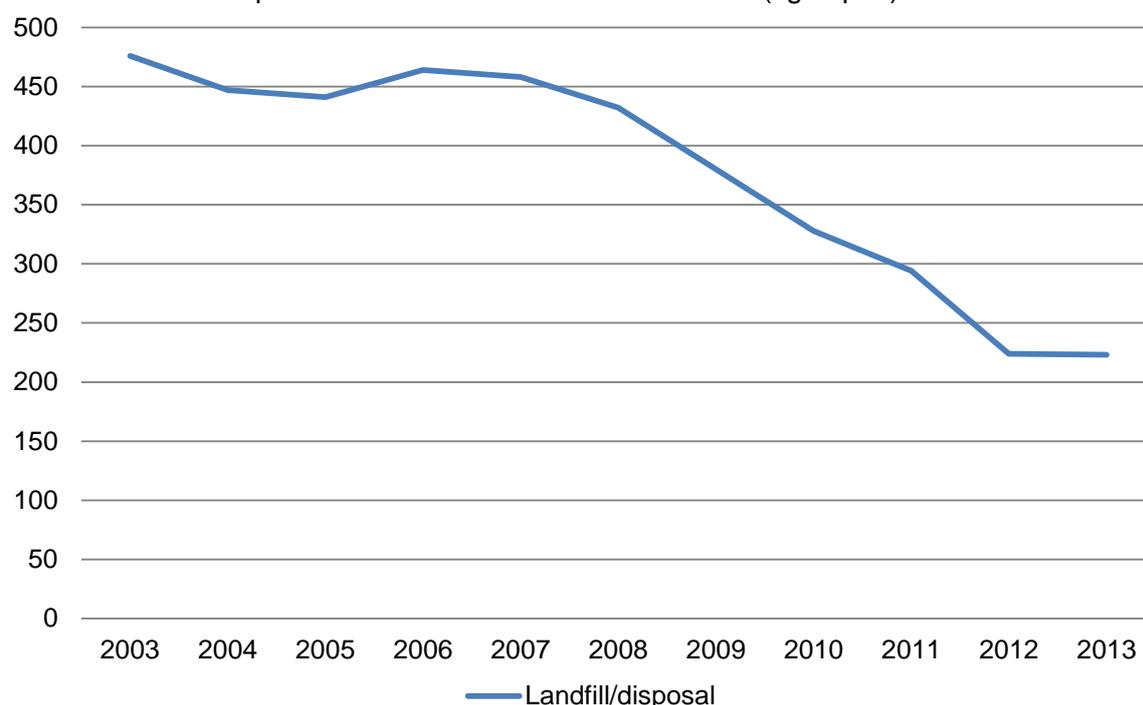
Ireland availed of the four year derogation under the Landfill Directive for each of the first two landfill targets but not the third.<sup>18</sup> Thus, Ireland's Landfill Directive targets were:

- 75% reduction (916,000 tonnes) on 1995 levels by 16 July 2010;
- 50% reduction (610,000 tonnes) on 1995 levels by 16 July 2013;
- 35% reduction (427,000) on 1995 levels by 16 July 2016.<sup>19</sup>

In addition to the landfill targets above, the European Commission in the Circular Economy Package (see section 2.4) has proposed to amend the Landfill Directive to include an additional binding landfill target on Member States to reduce the amount of municipal waste being sent to landfill to 10% by 2030.<sup>20</sup>

Ireland met the each of the first two Landfill Directive targets and preliminary data indicates it has also met the third target.<sup>21</sup> There are six landfill sites for municipal waste in Ireland.<sup>22</sup> Chart 2 illustrates in kilograms per capita the amount of waste sent to landfill in Ireland each year from 2003 to 2013.

**Chart 2:** Landfill/disposal statistics for Ireland 2003 - 2013 (kg/capita)



**Source:** Eurostat, *Municipal Waste Statistics* (available [here](#))

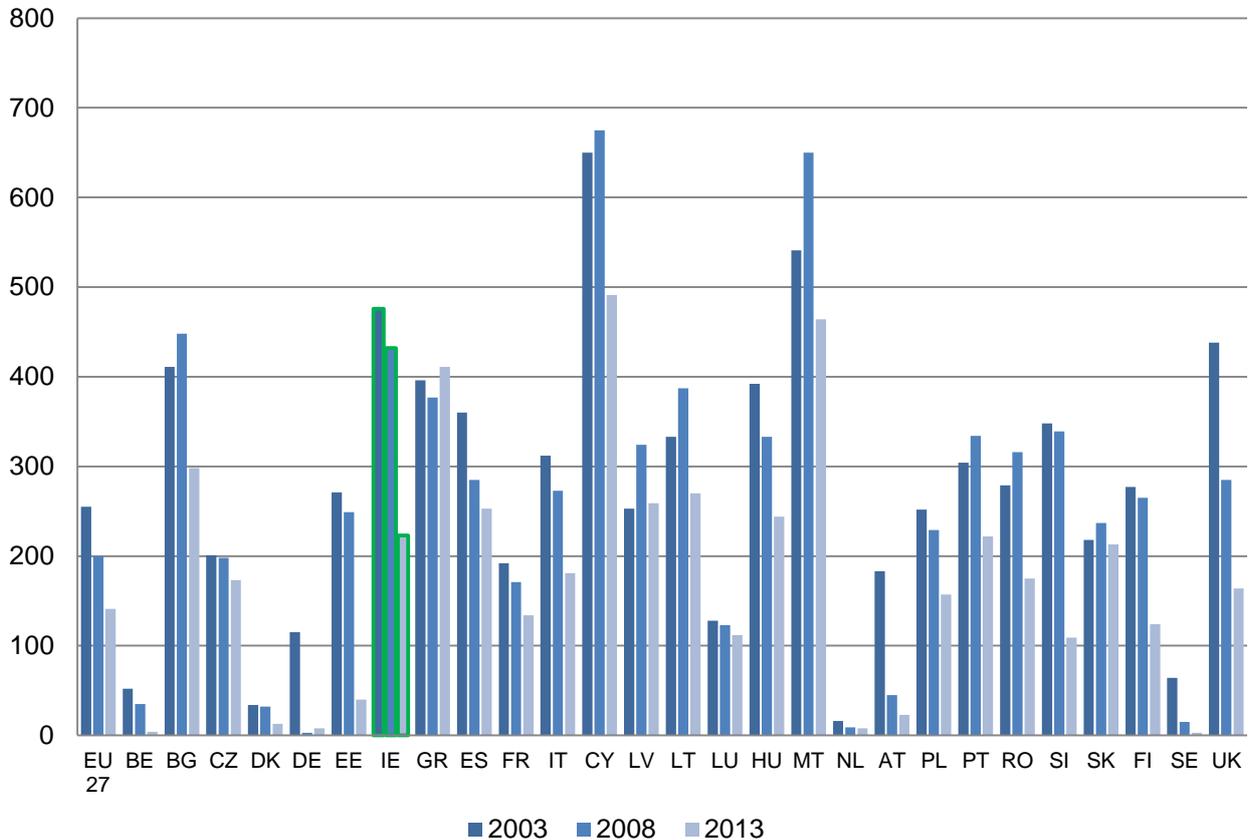
Despite the decrease in municipal waste being landfilled shown above, the Environmental Protection Agency (EPA) stated that:

“[p]reliminary data for 2014 (EPA, personal communication) indicate increases in municipal and construction and demolition waste generation since 2012, most likely as a result of economic growth.”<sup>23</sup>

In early 2016, landfill capacity was identified as being “critically low”.<sup>24</sup> By November 2016, Ireland’s landfill sites had reached the annual limits allocated to them for year by the EPA and local authorities.<sup>25</sup> In order to prevent environmental impacts such as a build up of uncollected wastes or illegal activity, additional capacity was authorised at two landfills – in Meath and Wicklow – to take an additional 120,000 tonnes of municipal waste until the 31 December 2016.<sup>26</sup> New annual landfill limits for 2017 came into effect from 1 January 2017.

Chart 3 provides a comparison in kilograms per capita of the amount of municipal waste landfilled in each of the EU 27 Member States in 2003, 2008 and 2013.

**Chart 3:** Comparison of municipal waste landfilled in the EU 27 in 2003, 2008, 2013 (kg/capita)



**Note:** Some of these figures are estimates

**Source:** Eurostat, *Municipal Waste Statistics* (available [here](#))

## 2.4 European Union policy developments regarding waste

Traditionally waste has carried negative connotations.<sup>27</sup> However, waste is increasingly being viewed in more positive terms as a resource.

EU waste policy has moved beyond targets and is focusing on the full implementation of the waste hierarchy. The aim is to turn waste into a secondary raw material to replace the use of other raw materials in production processes.

### Roadmap to a Resource Efficient Europe

The EU's 2011 Roadmap to a Resource Efficient Europe sets out a path for the EU becoming resource efficient, e.g. to create more with less by 2050. The Roadmap states that this will require, among other things:

- residual waste, e.g. non-recyclable and non-recoverable waste to be close to zero;
- better management of resources over their whole life cycle;
- changing the consumption pattern of consumers to help increase the demand for more resource efficient services and products through incentives, such as appropriate price signals and clear environmental information;
- boosting efficient production to improve the re-use of raw materials through market and policy incentives that reward efficient business investments;
- improving waste management to make better use of resources by giving a higher priority to re-use and recycling, including fully implementing waste legislation, ensuring high quality recycling, limiting energy to non-recyclable materials and virtually eliminating landfilling.<sup>28</sup>

## 7<sup>th</sup> Environmental Action Programme

Building on the Roadmap to a Resource Efficient Europe, the 7<sup>th</sup> Environmental Action Programme (7<sup>th</sup> EPA) requires the full implementation of EU waste law and the strict application of the waste hierarchy.<sup>29</sup> The 7<sup>th</sup> EAP states that the full implementation of EU waste legislation would save the EU €72 billion a year, increase the annual turnover of the EU waste management and recycling sector by €42 billion per year and create over 400,000 jobs by 2020.<sup>30</sup>

To achieve a resource efficient EU, the 7<sup>th</sup> EAP states that market-based instruments and other measures that prioritise the prevention, recycling and re-use of waste should be more systematically applied across the EU.

It also provides that public information campaigns are needed to increase the awareness and understanding of waste policy and to prompt a change in behaviour, e.g. changing the consumption pattern of consumers to help increase the demand for more resource efficient services and products.

## Circular Economy Package

In December 2015, the European Commission adopted the Circular Economy Package. The Package aims to reduce waste and protect the environment and contains measures to address the whole life cycle of services and products. In addition to providing revised recycling and landfill targets (see section [2.3](#)), the Package includes proposals:

- to ban the landfilling of separately collected waste;
- to promote the use of economic instruments to discourage landfilling;
- to harmonise calculation methods for recycling rates throughout the EU;
- to promote re-use and encourage industrial cooperation by turning one industry's by-product into another industry's raw material;
- to introduce economic incentives for producers for putting greener products on the market and support recovery and recycling schemes.<sup>31</sup>

### 3. Overview of waste regulation in Ireland

Regulation of the waste management sector in Ireland centres on protecting the environment and human health and safety. Local authorities and the EPA are responsible for the granting of waste permits and licences and for monitoring compliance with relevant environmental and waste legislation.

#### 3.1 Waste prevention and recovery of waste

In accordance with the Waste Framework Directive and the waste hierarchy, the [Waste Management Act 1996](#) (as amended)<sup>32</sup> (1996 Act) sets down provisions aimed at reducing the generation of waste and to promote the recovery of waste where generated.<sup>33</sup>

Section 21A of the 1996 Act<sup>34</sup> transposed the waste hierarchy into Irish law. Section 21A requires the waste hierarchy to be applied in waste prevention and management legislation and policy.

Section 27A of the 1996 Act<sup>35</sup> requires the EPA to establish waste prevention programmes.

Other waste prevention provisions include:

- any Minister or a local authority may provide support or assistance, including the provision of moneys, to research and development projects concerning the prevention or minimisation of waste or the recovery of waste;
- the Minister may make regulations (after consultation with other relevant ministers) for the purpose of preventing, minimising or limiting the production of waste or a specified class of waste or for the recovery of waste.

Section 32 of the 1996 Act places a general duty on the original waste producer or other waste holder to ensure that waste is treated in accordance with the waste hierarchy by:

- carrying out the treatment of the waste in accordance with the waste hierarchy himself or herself; or
- having the waste treated by a dealer or an establishment or undertaking which carries out waste treatment operations in accordance with the waste hierarchy; or
- arranging it through a private or public waste collector.<sup>36</sup>

Section 33 of the 1996 Act requires, subject to exceptions, each local authority to collect, or arrange for the collection of, household waste within its functional area. The exceptions are:

- there is already an adequate waste collection service in the part concerned of the local authority's functional area;
- the local authority is of the opinion that the estimated costs of the collection of the waste would be unreasonably high;
- the local authority is satisfied that the holder of the waste can reasonably make adequate arrangements for the disposal of the waste.

It also gives local authorities the discretion to collect, or arrange for the collection of, waste other than household waste.

## 3.2 Waste principles

EU environmental principles relating to waste are transposed in Ireland in the 1996 Act.

### **General environmental principles**

Section 21A of the 1996 Act provides that the Minister, the EPA and local authorities must consider the following factors when carrying out their functions under the 1996 Act:

“the general environmental protection principles of precaution and sustainability, technical feasibility and economic viability, protection of resources as well as the overall environmental, human health, economic and social impacts”.

### **Polluter pays principle**

Section 31A of the 1996 Act<sup>37</sup> transposes the polluter pays principle into Irish law. Section 31A provides that “[i]n accordance with the polluter pays principle, the costs of waste management shall be borne by the original waste producer or by the current or previous waste holders”.

### **Principles of self-sufficiency and proximity**

Section 37A of the 1996 Act<sup>38</sup> transposes the principles of self-sufficiency and proximity into Irish law. It requires the Minister (in cooperation with other Member States where this is necessary or advisable), the EPA, An Bord Pleanála and local authorities to take measures to establish an integrated and adequate network of waste disposal and recovery installations for mixed municipal waste collected from private households.

The waste network must be designed so as to enable the EU to become self-sufficient in waste disposal and in the recovery of waste. Furthermore, the network must also enable the State to proceed to become individually self-sufficient, taking into account the geographical circumstances or the need for specialised installations for certain types of waste. However, the principles do not require the State to possess the full range of final recovery facilities within the State.

### **Extended producer responsibility**

Sections 28, 29 and 53I of the 1996 Act provide that the Minister may make regulations concerning producer responsibility. There a number of producer responsibility initiatives (PRIs) operating in Ireland and cover areas such as waste electrical and electronic equipment (WEEE), batteries, tyres, end-of-life vehicles, and farm plastics. A [“Review of the Producer Responsibility Initiative Model in Ireland”](#) by the then DECLG concluded that PRIs have facilitated Ireland meeting its domestic and EU recycling targets and contributed to a substantial amount of waste being diverted away from landfill.<sup>39</sup>

### 3.3 Overview of the Irish waste market

The then DECLG estimated in 2012 that the Irish waste management market had an annual turnover of at least €500 million.<sup>40</sup> Within the waste management market, the household waste collection market is estimated to be worth at least €250 million annually.<sup>41</sup>

Local authorities traditionally provided waste collection services. However, over time local authorities decided to exit the waste collection market. With the exception of one or two municipal districts,<sup>42</sup> the Irish waste collection market is almost entirely privatised with private waste management firms competing for business side by side.

A 2012 “[Regulatory Impact Analysis on household waste collection](#)” (2012 RIA) by the then DECLG described the development of the Irish household waste collection market whereby private waste management firms compete for business as “somewhat unique” in the EU context.<sup>43</sup>

#### **Privatisation of the waste collection market in Ireland**

The 2012 RIA stated that when entering the market private waste collection firms prioritised the more lucrative areas where the risk of non-payment of waste collection fees was lowest, targeting dense, affluent urban areas.<sup>44</sup> It went on to note that in these areas households were more likely to have a comparatively low credit risk and to represent a smaller proportion of waiver dependant households.<sup>45</sup>

The effect of this was that the share of households with relatively higher credit risk and waiver dependent households on the local authorities’ client list increased. The 2012 RIA concluded that this challenged the financial sustainability for local authorities in directly providing waste collection services.<sup>46</sup> Resulting issues of costs and decreasing customer numbers led local authorities to decide to withdraw from the waste collection market.<sup>47</sup> The RIA went on to say that “[m]any local authorities have transferred clients to a private sector firm, effectively selling lists of households which were local authority clients”.<sup>48</sup>

### 3.4 Waste Charges

As noted above, regulation of the waste management sector is concerned with environmental protection and human health. Neither local authorities nor the EPA are involved with the economic aspects of waste management such as the setting of waste charges.<sup>49</sup> There is no national regulatory body mandated with overseeing the issue of waste charges.

## Overview of waste charges law and policy in Ireland

Under the [Local Government \(Financial Provisions\) \(No.2\) Act 1983](#) local authorities could charge for services they provided to any persons or premises, including for waste services. [Appendix 1](#) sets out a timeline of key events concerning household waste charges.

The [Protection of the Environment Act 2003](#) (2003 Act) inserted s.75 into the 1996 Act explicitly giving local authorities the power to charge for waste services under the 1996 Act. Section 75 of the 1996 Act provides that a local authority may charge for the provision of waste services by, or on behalf of, that authority. The local authority sets charges at an amount it considers appropriate, and there may be different charges in respect of persons, premises or services of different classes or descriptions. Similarly, it is up to the private operator to determine the charges for the waste services it provides.<sup>50</sup>

Section 75 of the 1996 Act also provides that the local authority may waive all or a portion of the waste charges on the grounds of personal hardship. The making of charges or granting of waivers for waste services is an executive function of the chief executive of the local authority. Elected members can not pass a resolution under s.140 of the [Local Government Act 2001](#) requiring any act, matter or thing to be done whose effect would be contrary to, or inconsistent with, s.75.

## Existing pay-by-use waste collection charges in Ireland

From the mid 1990s, Irish households paid either no charges or flat rate waste collection fees.<sup>51</sup> In 2005, government policy required waste collectors to introduce PBU waste charges. It was left up to the individual waste collectors to decide what type of PBU charges they would introduce, e.g. volume or weight-based charges. As result, a variety of PBU charges were introduced.

### ***Types of pay-by-use charges***

There are a number of different types of PBU charges currently present in the Irish waste collection market. O'Callaghan-Platt, Coakley and Gibson state, "[t]he mixed use of PBU systems currently in place may be hindering the potential for positive changes in domestic waste management behaviours on a national level".<sup>52</sup>

O'Callaghan-Platt, Coakley and Gibson group the different types of waste charges into the following three categories:

1. volume/differential bin size based system – householders pay for a particular sized bin and the price of the bin increases with the capacity (volume) of the bin;
2. tag based system – the tag based system can be broken down further into the following:

- i. tag-a-bin/bag system – householders purchase individual tags and attach them to each bin/bag and prices vary depending on the size of the bin/bag, e.g. tags for larger bins/bags are more expensive,
  - ii. pay per lift system – householders are charged for each individual collection;
3. weight based system – the weight based system can be broken down further into the following:
  - i. per kilogram system - householders pay per each kilogram of waste collected in addition to a flat rate annual standing charge,
  - ii. banded weight system – there are a number of different weight ranges (brackets) with prices for each and the annual household waste-presentation falls into one of the brackets,
  - iii. average weight system – household bills are calculated on the basis of an average waste-presentation rate, if a household presents less waste than the average for collection they get a reduction on their bill and if they present more they pay more.<sup>53</sup>

According to Scott and Watson, in a report on the “[Introduction of Weight-Based Charges for Domestic Solid Waste Disposal](#)”, the two main advantages of weight or volume-based fees are:

- it continually incentivises households to divert waste from landfills, e.g. households pay for each piece of waste so there is an economic incentive to dispose of as little waste as possible;
- it is more equitable, e.g., those who produce or dispose of more waste pay more and vice versa.<sup>54</sup>

This is in contrast to flat charges where there is no economic incentive to divert waste from landfill. Considering the effectiveness of weight-based charges versus volume-based charges, Scott and Watson state that for:

- weight-based fees - households are continually incentivised to divert waste as they incur a cost for all waste they dispose;
- volume-based fees - the effect of the incentivisation on households is “somewhat lumpy” as households only incur an additional cost when their waste exceeds the bins capacity.<sup>55</sup> For example, if a household does not fill their bin there is no incentive to reduce waste or they may compact the waste in their bin to fit more in.

### ***Impacts of pay-by-use charges in Ireland***

Research into the impacts on the environment of PBU waste collection charges in Ireland found that pay-by-weight charges are more effective at protecting the environment than other PBU charging systems.<sup>56</sup> A nationwide review of PBU charges in Ireland from 2003 to 2004 found waste-presentation rates increased from 240kg per person to 266kg per person in areas where PBU had not been introduced.<sup>57</sup>

This is in contrast to areas where local authorities had switched to PBU charges. In those areas waste-presentation rates decreased from 227kg per person to 221kg per person from 2003 to 2004 and to 219kg per person in 2005.<sup>58</sup> The review concluded there was “an

overall nationwide trend of decreasing waste-presentation rates year on year” as more and more local authorities switched from flat-based charges to PBU charges.<sup>59</sup>

A 2011 study by O’Callaghan and Coakley of PBU systems in Ireland found that:

“[w]eight-based charges are the single most effective PBU system. These charges have prompted the highest per household recycling levels (between 27% and 32%), highest diversion rates from landfill (between 28% and 35%) and the lowest total kerbside waste figures (between 800kg and 947kg per annum). If the estimated 80% of those households across Ireland currently on tag and differential bin systems switched to ‘per kg’ based PBU systems, it could lead to an annual diversion from landfill of approximately 446,000 tonnes of domestic waste per annum.”<sup>60</sup>

An estimated 20% of households pay their waste charges on a pay-by-weight basis in parts of Dublin and Cork.<sup>61</sup> Under Statutory Instrument No. 24 of 2016 Waste Management (Collection Permit) (Amendment) Regulations (2016 Regulations) every household in Ireland would have moved to a per kilogram pay-by-weight charging system (see section 4).

### **Case study: introduction of pay-by-weight charges in West Cork**

Mirroring the findings of similar studies in other jurisdictions, a case study on the introduction of pay-by-weight charges in West Cork found that the amount waste going to landfill decreased and the amount of waste that is recycled or composted increased.<sup>62</sup> Case study 1 summarises the findings from two EPA funded studies on the effect of the introduction of pay-by-weight charges in West Cork in 2003.

#### **Case study 1: Introduction of pay-by-weight waste charges in West Cork in 2003**

In January 2003, pay-by-weight charges were introduced in West Cork. The charges were €0.23/kg of waste plus a flat rate standing charge of €160 irrespective of the size and number of bins. There was a waiver/reduction in the standing charge for low-income households.

The introduction of pay-by-weight charges resulted in a 28% decrease in the amount of waste presented for landfill from 2002 to 2003, with a further 21% reduction from 2003 to 2004. Followed by a 26% increase from 2004 to 2007. From 2002 to 2007, the total amount of waste presented for landfill reduced by 28%. Kerbside recycling was introduced in September 2007. The L&RS was unable to obtain data to determine if the introduction of kerbside recycling further reduced the amount of waste presented for landfill.

From 2003 to 2007, the amount of waste recycled at civic amenity centers and bring banks increased by 579%. During this period, the amount of waste streams, which could be recycled at these facilities, increased from 1 to 13.

Looking at Clonakilty in more detail (as there is more data available for there), the amount of waste collected from 2002 to 2003 decreased by 45% after pay-by-weight charges were introduced. The average reduction for household was 433 kg. The reduction equaled a €100 saving when compared to waste bills for the previous year (2002).

Clonakilty households with garden waste reduced their waste the most and reductions were well above average in households that composted. Residents in local authority households, persons in one-person households and unemployed persons were less likely to compost.

**Source:** Scott and Watson (2006), '[Introduction of Weight-Based Charges for Domestic Solid Waste Disposal](#)' (ERTDI Report 54) and O’Callaghan-Platt and Davies (EPA) (2008), '[A Nationwide Review of Pay-By-Use \(PBU\) Domestic Waste Collection Charges in Ireland](#)' (STRIVE Report 9)

### Success factors for pay-by-use waste collection charges

A number of factors can affect whether variable waste charges successfully change consumer waste patterns. Factors identified by Scott and Watson that can affect the success of PBU charges include:

- not incorporating the variable charges into a flat charge structure, e.g., households can easily discern what the variable charges are;
- implementing parallel programmes and instruments to motivate consumers to recycle and compost, e.g. providing alternative waste disposal options such as providing kerbside recycling or bring-centers;
- an understanding of disposal options by households.<sup>63</sup>

Scott and Watson conclude:

“[t]he key element to success of unit based fees is the availability of alternative disposal options. There appears to be no single programme structure that is necessary to improve waste diversion rates; rather, the chosen waste management system must include comprehensive and accessible recycling and composting alternatives.”<sup>64</sup> (emphasis added)

### 3.5 Low income households

According to Bauer and Miranda, in a 1996 United States (US) study, studies have found that the amount of waste generated is linked to income. Low-income families, and elderly households tend to produce less waste.<sup>65</sup> They go on to say that, when parallel waste collection services are available such as kerbside recycling, unit based waste disposal charges can give disadvantaged households the opportunity to lower their waste collection charges by diverting as much waste as possible.<sup>66</sup>

However, Bauer and Miranda state that in comparison to average recycling and waste diversion rates US city waste officials observed a significantly lower rate in recycling and waste diversion in low-income, and minority households.<sup>67</sup> This prevents disadvantaged households from taking full advantage of cost saving opportunities arising from the unit-based waste charging system.<sup>68</sup> Bauer and Miranda conclude that in order to take advantage of cost saving opportunities arising from the unit based waste charging system disadvantaged residents need special assistance through public information and education programmes to maximize cost-savings opportunities.<sup>69</sup>

A submission by St. Vincent de Paul in 2014 to the then DECLG concerning waste charges mirrors the findings above. In its submission, St. Vincent de Paul referred to the need to offer alternative waste disposal options and the need for public awareness of same. It stated:

“[t]he assumption however, that households will reduce, reuse and recycle can only be made if there are adequate, comprehensive, accessible and advertised facilities across the state in order to do so.”<sup>70</sup>

## Waste waivers

As noted above local authorities may grant waste waivers on the grounds of personal hardship. However, the 1996 Act does not address the waiving of charges by private waste management firms.<sup>71</sup>

The then Department of Environment, Heritage and Local Government (DEHLG) previously confirmed to the Ombudsman (as part of the Ombudsman's review of the waste waiver scheme) that there is no legal obligation on private waste collectors offering a private service to provide waivers. In its submission to the Ombudsman the then DEHLG stated that:

“[t]here is legal advice that such a [waste waiver] scheme is not legally provided for in circumstances where the private sector are providing the [waste collection] service. However, where a local authority enters into an arrangement with a private operator to provide a service to certain households a waiver scheme can apply.”<sup>72</sup>

With regard to local authorities entering into an arrangement with private waste operators to provide a service as a substitute for a local authority waiver scheme, the Minister for Housing, Planning and Local Government, Simon Coveney TD, summarised the position (as of June 2016) concerning waste waivers:

“[t]he vast majority of such contractual commitments for private operators to provide a waiver have now expired. In that context, the number of households in receipt of waiver discounts is likely to decline over time, especially as some householders were able to take advantage of special reduced offers elsewhere which actually undercut the waiver price. However, selected private operators still offer some level of discount to former waiver customers on a voluntary basis.”<sup>73</sup>

St. Vincent de Paul in its 2014 submission to the then DECLG stated that the wearing away of the waste waiver scheme previously available by local authorities has resulted in some low income households having to meet the full costs of their waste charges out of the little resources they have.<sup>74</sup>

The Ombudsman in a 2008 report of their investigation into waste waiver schemes administered by local authorities recommended that the then DEHLG address the legal position concerning waste waivers where the waste collection service is fully privatised.<sup>75</sup>

The Ombudsman report noted that a 2005 report by Combat Poverty Agency analysed and identified three options for a national waste waiver scheme, they were:

- a national tax credit system through the tax system;
- a local system implemented by local authorities;
- a national waiver system delivered through the social welfare system.<sup>76</sup>

The Combat Poverty Agency report recommended that the most effective waiver system would be a local system administered by local authorities and that consideration ought to be given to centrally funding the system through grants to local authorities.<sup>77</sup>

The Ombudsman's report also welcomed the submission of the then DEHLG regarding a consultation on the need of a regulator for the waste management sector. The consultation was considering the need for a regulator and the possible powers it could have including in particular, the power to impose a public service obligation.<sup>78</sup>

The Minister for Housing, Planning and Local Government, Simon Coveney TD, has said that there is an interdepartmental working group comprised of his Department, the Departments of Social Protection, Public Expenditure and Reform, Finance, and the Tánaiste's Office considering the impacts of waste charges on low-income households.<sup>79</sup> However, the Minister went on to say that given the large-scale privatisation of the waste collection market "it is becoming increasingly apparent that a national waiver scheme could not be imposed in the context of an open market for waste collection".<sup>80</sup>

## 4. Proposed changes to Ireland's waste charging system

In January 2016, regulations were adopted to introduce pay-by-weight waste charges from 1 July 2016. However, increases in standing charges for waste collection by waste companies indicated large increases in some people's waste collection bills, resulting in opposition from a number of Deputies and Senators. In June 2016, the Minister for Housing and Local Government, Simon Coveney TD, made an agreement with the Irish Waste Management Association (IWMA) to postpone the introduction of pay-by-weight waste charges for the next 12 months (until June 2017).

### 4.1 Waste Management (Collection Permit) (Amendment) Regulations 2016

In 16 January 2016, the then Minister for the Environment, Community and Local Government, Alan Kelly TD, signed Statutory Instrument No. 24 of 2016 Waste Management (Collection Permit) (Amendment) Regulations into law (2016 Regulations).<sup>81</sup>

The primary purpose of the 2016 Regulations is to provide for the introduction of a nationwide pay-by-weight charging system for the collection of household waste. The 2016 Regulations will apply to households and apartments (household waste includes waste from apartments).<sup>82</sup>

Regarding fees, the 2016 Regulations provided that on and after 1 July 2016 a fee must be charged for each kilogramme of household waste collected or transported, subject to certain exceptions.

The Eighth Schedule to the 2016 Regulations provided the following minimum mandatory fees for waste collection:

- residual household kerbside waste ('black bin') - 11 cent/kilogramme;
- food waste and, as the case may be, bio-waste ('brown bin') - 6 cent/kilogramme; and
- recyclable household kerbside waste ('green bin') - 2 cent/kilogramme.

Households opting out of a brown bin could not get a reduction in their waste charges.

The fees proposed in the 2016 Regulations were minimum fees. The Regulations did not propose to set a maximum per kilogramme charge.

Waste collection companies could have set their set fees at a higher rate than that prescribed in the regulations. For example, in the context of green bin charges, a Ministerial "[Briefing on Introduction of Pay-by-Weight for Household Waste](#)" on the Department of Housing, Planning and Local Government website stated:

**"Can bin companies charge as much as they like?"**

- The Government has set minimum mandatory fees for household waste to help ensure that at least the cost of treating the waste collected is charged. The Minister has decided to set a **zero cent** minimum fee per kg may be charged for **green bins** (recyclate) given the variable nature of the value of the contents of this bin.
- It is a matter for each company, within a competitive market, to decide as they currently do, what fees levels they will charge and what their standing or service charge they will impose."<sup>83</sup> (emphasis original)

Regarding apartments, the relevant management company would be charge the pay-by-weight fees and the management company would be responsible for calculating and allocating waste charges for each apartment.<sup>84</sup>

**Penalties**

In accordance with requirements under EU law,<sup>85</sup> Statutory Instrument No. 71 of 2013 European Union (Household Food Waste and Bio-Waste) Regulations 2013 provides that householders must segregate their food waste.

Regulation 6 of the 2013 Regulations provides that householders must segregate their food waste and store it separately from non-biodegradable materials, other waste and contaminants in their general waste.

It also places an obligation on the householder to ensure that an authorised waste collector collects the food waste, unless the householders compost the food waste at home or bring it themselves to authorised treatment facilities such as civic amenity sites or anaerobic digestion sites.

Under Regulation 11 of the 2013 Regulations, failure to segregate food waste is a criminal offence. The punishment on summary conviction is a fine not exceeding €4,000 and/or up to three months' imprisonment or on conviction on indictment a fine not exceeding €500,000 and/or up to three years imprisonment.

Under the 2016 Regulations, where a waste collector intends to impose a penalty (non-criminal) on a household for not complying with their waste contract the penalty must be communicated clearly to the customer. This includes penalties for failing to segregate waste or overloading bins.

## 4.2 Suspension of the introduction of the pay-by-weight system

In May 2016, the Minister for Housing and Local Government, Simon Coveney TD, announced that the charges for green bin waste would not be going ahead.<sup>86</sup> The Minister stated that the cost for green bin waste could be absorbed into another part of the waste companies pricing structure.<sup>87</sup> The introduction of pay-by-weight charges for black and brown bins was due to proceed.

In June 2016, Minister Coveney made an agreement with the IWMA to freeze their prices for waste collection services for the next 12 months (until June 2017). Waste customers were to receive dual waste bills, and have the option of voluntarily transferring to the pay-by-weight system from January 2017.<sup>88</sup> However in December 2016, the Cabinet agreed that dual billing would not proceed.<sup>89</sup>

On 30 June 2016, the Minister for the Environment, Community and Local Government, Simon Coveney TD, signed Statutory Instrument No. 346 of 2016 Waste Management (Collection Permit) (Amendment)(No.2) Regulations 2016 (2016 No.2 Regulations). The 2016 No.2 Regulations removed the requirement for a mandatory per kilogram pay-by-weight charging system and deleted the Eighth Schedule to the 2016 Regulations.

Since the 2016 No.2 Regulations, the Minister for Communications, Climate Action and Environment is not involved in setting the level of waste charges. Waste charges are determined between waste collection companies and their customers, subject to compliance with relevant legislation.<sup>90</sup> Waste collection companies may still offer pay-by-weight charges.<sup>91</sup>

## **Reduction in waste charges for 87% of households**

In February 2016, the then Minister for Environment, Community and Local Government, Alan Kelly TD, stated that “almost 90% of Irish households” waste bills would be reduced due to the implementation of the pay-by-weight waste charging system.<sup>92</sup>

The Minister for Communications, Climate Action and Environment, Denis Naughten TD, in response to a parliamentary question seeking an analysis of the 90% figure for households reducing their waste bills, stated the figure:

“was based on a study of a pay-by-weight model which was in operation in the south-west of the country, when compared to other pricing structures in that particular area. The area chosen had a mix of urban and rural customers and pay-by-weight was long established, so that the customers in that particular area already had time and opportunity to adapt their behaviour to preventing and segregating waste. The figures showed that households of 4 people or less in that area were better off under pay-by-weight and those figures were extrapolated, using CSO data on household size, to give an indication of the savings which were achievable.”<sup>93</sup>

The Sunday Times reported that the calculation for the percentage of households whose waste bills would be reduced “did not take into account the possibility that some collectors would increase their flat charge.”<sup>94</sup>

## **Review of waste charges**

In November 2016, the Department of Communications, Climate Action and Environment commissioned from an external consultant a report titled “Review of the Obstacles that hindered the planned introduction of pay by weight charging in July 2016”.<sup>95</sup> As of 6 April 2017, that report had not been published.

In December 2016, the Minister for Communications, Climate Action and Environment, Denis Naughten TD, sought from Cabinet time to review the system for waste charges.<sup>96</sup> The Department is reviewing “an incentivised system which encourages people to prevent, reduce and segregate their waste.”<sup>97</sup> The Minister indicated, “any such system will encompass more than just the previously proposed pay-by-weight per-kilogramme model”.<sup>98</sup> The review is due to be completed by July 2017.<sup>99</sup>

## Appendix 1: Timeline of key events concerning household waste charges

| Year | Summary of development  |
|------|---|
| 1975 | In 1975, the first Waste Framework Directive (Directive 75/442) was adopted. It laid down basic principles on the collection, disposal, recycling and processing of waste, and introduced key principles, such as the polluter pays principle.  |
| 1978 | The <a href="#">Local Government (Financial Provisions) Act 1978</a> abolished domestic rates for households.   |
| 1983 | Under the <a href="#">Local Government (Financial Provisions) (No.2) Act 1983</a> local authorities could charge for services they provided to any persons or premises. Using the powers in the Act local authorities could introduce charges for household waste collection and disposal.  |
| 1991 | The Waste Framework Directive was substantially updated by Directive 91/156/EEC. Directive 91/156/EEC required amongst other things, the requirement to obtain a permit from the relevant authority in order to carry out certain waste management activities and the drawing up of waste management plans.   |
| 1994 | In “Recycling for Ireland” by the then Department of Environment set a 30% recycling target by 1999 for packaging waste. In the context of recycling, the report emphasised the role of local authorities in supporting and intensifying recycling.   |
| 1996 | The <a href="#">Waste Management Act 1996</a> provides a legislative framework for managing waste in Ireland. Amongst other things, the 1996 Act introduced waste principles into Irish law and provided for the issuing of waste collection permits and waste licences to private firms.<br><br>It also established a central role for local authorities in the provision of waste services, subject to exceptions.  |
| 1997 | The “Sustainable Development – A Strategy for Ireland” by the then Department of Environment report committed to exploring the use of economic instruments to reduce waste, promote reuse/recycling and increase management efficiency.   |
| 1998 | “ <a href="#">Waste Management – Changing our Ways</a> ” by the then Department of Environment and Local Government noted that local authority waste charges did not reflect the full cost of the service being provided and stated that local authorities should recoup the full costs for the service.<br><br>It stated that the charges should be in line with usage, e.g. PBU charges as this would incentivise waste reduction. It encouraged local authorities to review household and commercial waste charges “with a view to introducing weight related charging to the fullest extent possible”.<br><br>It also encouraged greater participation in the waste management sector by the private sector as a method of meeting national waste objectives. |
| 2001 | The <a href="#">Waste Management (Amendment) Act 2001</a> made the making of waste management plans an executive function of local authorities. It also legislated for economic instruments relating to waste, e.g. the landfill levy, plastic bag tax.   |

|                    |   |
|--------------------|---|
| <p><b>2002</b></p> | <p>“<a href="#">Delivering Change – Preventing And Recycling Waste 2002</a>” by the then Department of Environment and Local Government advocated that commercial and household waste charges should be based on usage. It stated that the Government expected all local authorities to start moving towards weight/volume charging to the fullest extent possible within three years.</p>  |
| <p><b>2003</b></p> | <p><a href="#">Protection of the Environment Act 2003</a> (2003 Act) inserted s.75 into the 1996 Act giving local authorities the power to charge for waste services under the 1996 Act. Previous to this local authorities charged for waste services under the <a href="#">Local Government (Financial Provisions) (No.2) Act 1983</a>.</p> <p>The 2003 Act also gave local authorities power to stop collecting household waste if charges under s.75 of the 1996 Act or under the <i>Local Government (Financial Provisions) (No.2) Act 1983</i> are not paid (s.33 of the 1996 Act).</p> |
| <p><b>2004</b></p> | <p>“<a href="#">Waste Management – Taking Stock and Moving Forward</a>” by the then Department of Environment and Local Government set out a plan for waste collectors, both public and private to switch to weight or volume-based charging across the country by 1 January 2005. It was up to individual collectors to decide whether they would switch to volume or weight-based charges.</p>  |
| <p><b>2012</b></p> | <p>“<a href="#">Regulatory Impact Analysis on household waste collection</a>” by the then DECLG considered whether franchise bidding should be introduced for the purposes of waste management services. It recommended the retention of the current market structure accompanied by measures to strengthen the regulation of household waste collection.</p>   |
| <p><b>2012</b></p> | <p>“<a href="#">A Resource Opportunity – Waste Management Policy in Ireland</a>” by the then DECLG set out a number of measures for Ireland to become a recycling society and for the virtual elimination of landfilling. It stated that an inter-departmental working group would be set up to consider the impact of waste charges on low income households and that it would report to government with recommendations on measures to minimise the impact of waste charges on low income households.</p>   |
| <p><b>2016</b></p> | <p>Statutory Instrument No. 24 of 2016 Waste Management (Collection Permit) (Amendment) Regulations was adopted. These regulations provide that every household in Ireland will move to a per kilogram weight based system.</p> <p>Statutory Instrument No. 346 of 2016 Waste Management (Collection Permit) (Amendment)(No.2) Regulations 2016 removed the requirement for a mandatory per kilogram pay-by-weight charging system.</p>   |

**Source:** Compiled by L&RS

- <sup>1</sup> Eurostat Newsrelease (2015), 'Each person in the EU generated 481 kg of municipal waste in 2013' (26 March 2015), No. 54/2015 (available [here](#))
- <sup>2</sup> Eurostat Newsrelease (2015)
- <sup>3</sup> European Environment Agency (EEA) (2014), 'Waste: a problem or a resource?', at p.8 (available [here](#))
- <sup>4</sup> Environmental Protection Agency (n.d.), 'Environmental indicators - Biodegradable Waste Diversion from Landfill' (available [here](#))
- <sup>5</sup> Department of Environment, Community and Local Government (2012), 'Regulatory Impact Analysis on household waste collection', at p.8 (available [here](#))
- <sup>6</sup> Department of Environment, Community and Local Government (2012), at p.8
- <sup>7</sup> European Commission, 'EU Waste Policy the Story Behind the Strategy', at p.6 (available [here](#))
- <sup>8</sup> Browne (2014), 'The Law of Local Government', Chapter 15, Section A - European Waste Management Policy
- <sup>9</sup> European Commission (2012), '[Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste](#)', at p.48 (available [here](#))
- <sup>10</sup> Article 13 of the Waste Framework Directive
- <sup>11</sup> First Programme of Action on the Environment 1973 OJ C112, 20 December 1973
- <sup>12</sup> Sands (2013) 3<sup>rd</sup> ed, '*Principles of International Environmental Law*', (Cambridge University Press: Cambridge), at p.228
- <sup>13</sup> Bourguignon (2015), EPRS | European Parliamentary Research Service, '*Understanding waste streams Treatment of specific waste*', at p.2 (available [here](#))
- <sup>14</sup> Bourguignon (2015) at p.2
- <sup>15</sup> European Commission (COM/2015/0595 final), '*Proposal for a Directive of the European Parliament and of the Council amending Directive 2008/98/EC on waste*', Article 10(d) amending Article 11 of the Waste Framework Directive (available [here](#))
- <sup>16</sup> Environmental Protection Agency (2017), '*Ireland - Progress towards EU waste targets – January 2017*' (available [here](#))
- <sup>17</sup> European Commission Environment, 'Waste' (available [here](#))
- <sup>18</sup> Stream Bioenergy (n.d.), '*Landfill Diversion Obligations - The Landfill Directive (1999/31/EC)*' (available [here](#))
- <sup>19</sup> Stream Bioenergy (n.d.)
- <sup>20</sup> European Commission (COM(2015) 594 final), '*Proposal for a Directive of the European Parliament and of the Council amending Directive 1999/31/EC on the landfill of waste*', Article 1(c) amending Article 2 of the Landfill Directive
- <sup>21</sup> Environmental Protection Agency (2016), '*Ireland's Environment An Assessment 2016*', at p.93 (available [here](#)). The meeting of the Ireland's 2016 landfill target is based on preliminary EPA data.
- <sup>22</sup> Environmental Protection Agency (2016), at p.91
- <sup>23</sup> Environmental Protection Agency (2016), at p.91
- <sup>24</sup> Environmental Protection Agency (2016), at p.95
- <sup>25</sup> Environmental Protection Agency (2016), at p.95 and Dick Ahlstrom (The Irish Times), '*Emergency action as landfill sites exceed yearly capacity*' (22/11/2016) (available [here](#))
- <sup>26</sup> Tim O'Brien (The Irish Times), '*Meath and Wicklow landfills to take extra waste to avert crisis*' (22/11/2016) (available [here](#))
- <sup>27</sup> European Commission, '*EU Waste Policy the Story Behind the Strategy*', at p.6 (available [here](#))
- <sup>28</sup> European Commission (2011), '*Communication from the Commission to the European Parliament and the Council, the European Economic and Social Committee and the Committee of the Regions Roadmap to a Resource Efficient Europe*', COM/2011/0571 final at pp.3-8 (available [here](#))
- <sup>29</sup> European Commission (2013), '*Decision No 1386/2013/EU of the European Parliament and of the Council of 20 November 2013 on a General Union Environment Action Programme to 2020 'Living well, within the limits of our planet'*', OJ L 354, 28.12.2013, p. 171–200 (available [here](#)), at para.40
- <sup>30</sup> European Commission (2013), at para.39 at footnote (4)
- <sup>31</sup> European Commission Press Release, '*Closing the loop: Commission adopts ambitious new Circular Economy Package to boost competitiveness, create jobs and generate sustainable growth*' (2/12/2015) (available [here](#))
- <sup>32</sup> As amended by the [Waste Management \(Amendment\) Act 2001](#), [Protection of the Environment Act 2003](#), [Chemicals Act 2008](#), [Environment \(Miscellaneous Provisions\) Act 2011](#), and the [Environment \(Miscellaneous Provisions\) Act 2015](#). The Waste Management Act 1996 has also been amended by a numerous statutory instruments (for a list see [here](#)).
- <sup>33</sup> Browne (2014), '*The law of local government*', at para.15.33
- <sup>34</sup> As inserted by r.7 of S.I. No. 126 of 2011 the European Communities (Waste Directive) Regulations 2011
- <sup>35</sup> As inserted by r.7 of S.I. No. 126 of 2011 the European Communities (Waste Directive) Regulations 2011
- <sup>36</sup> As inserted by r.16 of S.I. No. 126 of 2011 the European Communities (Waste Directive) Regulations 2011
- <sup>37</sup> As inserted by r.15 of S.I. No. 126 of 2011 the European Communities (Waste Directive) Regulations 2011
- <sup>38</sup> As inserted by r.17 of S.I. No. 126 of 2011 the European Communities (Waste Directive) Regulations 2011
- <sup>39</sup> A Department of Environment, Community and Local Government (2014), '*Review of the Producer Responsibility Initiative Model in Ireland*', at p.676 (available [here](#))
- <sup>40</sup> Department of Environment, Community and Local Government (2012), at p.8
- <sup>41</sup> Department of Environment, Community and Local Government (2012), at p.8
- <sup>42</sup> Written Answers, '*Waste Disposal Charges*' (28/June/2016) (available [here](#))
- <sup>43</sup> Department of Environment, Community and Local Government (2012), at p.1
- <sup>44</sup> Department of Environment, Community and Local Government (2012), at p.6
- <sup>45</sup> Department of Environment, Community and Local Government (2012), at p.6
- <sup>46</sup> Department of Environment, Community and Local Government (2012), at p.6
- <sup>47</sup> Department of Environment, Community and Local Government (2012), at p.6

- <sup>48</sup> Department of Environment, Community and Local Government (2012), at p.6
- <sup>49</sup> Department of Environment, Heritage and Local Government (2004), 'Consultation Paper Regulation of the Waste Management Sector', at p.18 (available [here](#))
- <sup>50</sup> Department of Environment, Heritage and Local Government (2004), at p.14
- <sup>51</sup> Curtis, Lyons, and O'Callaghan-Platt, 'Managing household waste in Ireland: behavioural parameters and policy options' *Journal of Environmental Planning and Management* Vol.54, No.2, March 2011, 245-266 at p.250
- <sup>52</sup> O'Callaghan-Platt, Coakley and Gibson (2010), 'Evaluation of pay-by-use (PBU) domestic waste charging systems in Ireland', WIT Transactions on Ecology and the Environment, Vol 129, (WIT Press), at p.511
- <sup>53</sup> O'Callaghan-Platt, Coakley and Gibson (2010), at pp.514-515
- <sup>54</sup> Scott and Watson (2006), 'Introduction of Weight-Based Charges for Domestic Solid Waste Disposal Final Report (2000-DS-6-M1)', (Environmental Protection Agency), at p.4 (available [here](#))
- <sup>55</sup> Scott and Watson (2006), at p.2
- <sup>56</sup> O'Callaghan-Platt, Coakley and Gibson (2010), at p.515
- <sup>57</sup> O'Callaghan-Platt and Davies (2008), 'A Nationwide Review of Pay-By-Use (PBU) Domestic Waste Collection Charges in Ireland – Executive Summary' (STRIVE Report 10), at p.2 (available [here](#))
- <sup>58</sup> O'Callaghan-Platt and Davies (2008), at p.2
- <sup>59</sup> O'Callaghan-Platt and Davies (2008), at p.2
- <sup>60</sup> O'Callaghan and Coakley (2011), 'Study of Pay-by-use Systems for Maximising Waste Reduction Behaviour in Ireland' (STRIVE Report 84), at p.viii (available [here](#))
- <sup>61</sup> The Irish Times, 'Kicking the can down the road; Bin charges', (22/06/2016) (available [here](#))
- <sup>62</sup> Scott and Watson (2006), at p.4
- <sup>63</sup> Scott and Watson (2006), at pp. 3, 6 & 7
- <sup>64</sup> Scott and Watson (2006), at p.9
- <sup>65</sup> Bauer and Miranda (1996), 'The Urban Performance of Unit Pricing: An Analysis of Variable Rates for Residential Garbage Collection in Urban Areas', US EPA Cooperative Agreement #CR822-927-010, at p.27 (available [here](#))
- <sup>66</sup> Bauer and Miranda (1996), at p.27
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