

RPS

The Irish Household Waste Collection Market

CCPC

Public Consultation Response

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Irish Household Waste Collection Market

Public Consultation - Response

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1 PUBLIC CONSULTATION – RESPONSE

RPS are please to submit this response to the CCPC'S public consultation on the Irish Household Waste Collection Market. We are available to discuss and address any query relating to the data or views in this document.

1.1 COMPETITION

1.1.1 In your view, are there distinct local geographic markets in Ireland in the household waste collection market? If so, what characteristics would govern their size and boundaries? Please explain your answer.

Our view is that there are distinct local geographic markets for the collection of household waste. The population density of each of the country varies from dense urban areas to lowly populated rural lands. The markets in the Dublin metropolitan area which now stretches almost contiguously into parts of border counties Wicklow, Kildare and Meath. This is a large market capable of supporting multiple collectors. This is in contrast to all other urban centres which have a distinctly lower population density and generally will contain less collectors. Analysing areas of low population we see a lower number of active collectors (on average 1-2). For example in Glenealy in Wicklow, a village of almost 700 people, there are currently two collectors which have routes (AWD¹ and Greenstar²). This is not unusual in Ireland a country which has a significant portion of its population living in low population density areas. This characteristics of a collection market on the East Coast compared to one on the West and North West are defined by their population density which influences the cost and extent of services offered. We don't believe there is a single metric which defines the size of a household collection market in Ireland. We do believe that a village like Glenealy is better service by a selected collector. A single collector within a defined market has security of supply and can commit to offering a wider range of services at a price point awarded through competition. Innovative collection solutions (such as multi-compartment bins to make routes more economical or centralised shared bins) can also be sought and awarded. Revisiting the Glenealy example both collectors identified are not providing a brown bin service (possibly too expensive to consider). Designing a market needs to take account of many of the above factors including also current number of market players, service depots, collection routes and services. Geographical features, such as mountainous areas will also need to be taken into account.

The Competition Authority stated in their 2010 submission to the DECLG "research indicates that the average cost of providing municipal waste collection services fall as the quantity of waste collected increases (economies of scale), but only up to the size of the collection vehicle. US studies on collection costs suggest that no economies of scale exist for cities with 50,000 inhabitants or more, but other research has found this to be up to 20,000 inhabitants". The studies referenced are from the US and the Netherlands and are referenced in other reports by the Office of Fair Trading³ and the OECD⁴ on competition in the waste sector.

¹ <https://www.awdgroup.ie/>

² <https://www.greenstar.ie/uploads/docs/900835.pdf>

³ Office of Fair Trading, More Competition Less Waste (May 2006)

⁴ OECD Public Management Review (2008)

These provide a rule of thumb in terms of the potential size of a tendered collection market and the achievement of economies of scale. In a previous enforcement decision⁵ the Competition Authority questioned the relative importance of economies of scale in the waste collection sector, “moreover the evidence from other parts of the country would suggest that economies of scale play a relatively limited role in household waste collection markets. For example on the one hand there is one private operator servicing an entire city comprising approximately 19,000 households in total, i.e. Limerick. On the other hand, there are six collectors servicing nearly 42,000 households in Meath and there are approximately five/six private operators in Kildare as well as the local authority servicing approx 50,000 households between them. However it may be the case that such operators exploit economies of scale by servicing customer in adjacent counties. “

The above extract shows the variability in collection market share and minimum efficient scale being achieved by operators in Ireland. Against this background, defining the range of inhabitants within which a market should be sized as suggested from International research is questioned. For example in Dublin if a collection contract were issued for every 50,000 inhabitants a total of 25 collection contracts would be issued based on the latest population data⁶. This is an undesirable outcome putting the onus on the Dublin Local Authorities to divide up a small geographic county into 25 areas. In high density areas this would be impractical and illogical. Additionally there would be the requirement to prepare issue and administer twenty five different collection contracts. Coupled with ongoing and increased waste enforcement responsibilities (in the future) this scenario would be very difficult to resource and manage.

In England where competitively tendered contracts have been issued for the collection of household waste since 1980s the scale of the tendered market can be significantly larger. In 2011 one of the largest waste management service providers in the country, BIFFA Waste Services, were awarded the collection contract from Portsmouth City Council⁷ to service over 207,000 inhabitants for eight years. Three collectors tendered for the contract. A similar length contract was awarded to the same company jointly by East Hampshire District Council (EHDC) and Winchester City Council (WCC)⁸ to service almost 100,000 households. These contracts do not necessarily reflect the typical scale of competitively tendered contracts awarded in England but illustrates that the sizing of markets can be much greater than those at which achieve economies of scale.

If local authorities are to size collection markets the number of persons, the socio-economic classes, population density and the types of housing will all need to be considered. If the area selected is too large, in terms of the number of households, there is the possibility of excluding small and medium size operators with a limited of number of larger collectors submitting a tender. Alternatively if the market area selected is too small cost efficiencies achieved through economies of scale and density will not be realised. It is recommended that contracting authority's have the flexibility in sizing market areas reflecting the uniqueness of regions in terms of geographical size, population density and household types.

⁵ Competition Authority (2005) Alleged Excessive Pricing by Greenstar Recycling Holdings Limited in the Provision of Household Waste Collection Services in Northeast Wicklow, Enforcement Decision No. E/05/002, Dublin: The Competition Authority.

⁶ Dublin Population 1,270,603 persons, CSO 2011 Census.

⁷ http://www.portsmouth.gov.uk/yourcouncil/20694_20491.html. Accessed 9th August 2011

⁸ <http://www.ciwm.co.uk/CIWM/Publications/LatestNews/BiffaWinsSecondHampshireContract.aspx>. Accessed 9th August 2011

1.1.2 What is your view on the level of competition in the household waste collection market in Ireland? Does this vary across the country? Where possible support your views with relevant data, analysis, reports, experience, etc.

We believe the level of competition in the household waste collection market depends on your location. The answer for a household in a city, is different to those in a suburb, town, village or crossroads. Overall we believe the level of competition in the market to be low even in markets with high population density. For example in 2006 Panda entered the household waste collection market in the Dun Laoghaire Rathdown area. It offered a wider range of services for a lower price compared to the Council. Over a relatively short period, 2 years, the company became the dominant player with approximately two thirds of the householders switching. In 2007 a second collector, Greenstar, began offering services in this market also (same service at a lower price). Householders were less inclined to switch a second time and Greenstar's market share remain relatively small. The services offered by Greenstar did not include a brown (food waste) bin, reflecting their small market share versus an expensive service to deliver with inconsistent participation and volumes of waste presented. Roll forward to 2016, Panda have remained the dominant collector in the Dun Laoghaire area and then proceed to acquire Greenstar, reducing the level of competition. In the highly populated market of Dun Laoghaire a single collector is the dominant operator.

A similar low level competition is currently experienced by householders in Bray a large urban centre to the South of Dublin City. The town has a population of over 32,000 people. In the household collection market, there are two main collectors. The household waste collection fees currently charged by each collector are outlined in **Table 1.1**. In communication with both collectors the monthly flat fee price is being pushed in favour of the pay-by-lift options. The desire to secure customers and market share is primary, the objective to lower residual waste and increase recycling is not a priority. The total annual fee a customer opting for the pay by lift approach is difficult to compare and will depend on many factors including the age profile of the household, the number of children, age of children, environmental awareness and income status.

Examining the unit charges, the pay by lift option appears to be highly disincentivised and in our view customers are more likely to take the flat fee option. The impact of this approach on recycling is likely to be significant. Customers on a flat fee structure are less likely to be focused on separating out recyclables and food waste than those who are financially rewarded for doing so. The EPA has carried out significant research in this area (reference is made to previous studies under the STRIVE and ERTDI funding mechanisms).

Table 1-1: Waste Collection Pricing

Charging Service	Collector 1	Collector 2
Pay by Lift Mechanism		
Annual Charges	€99	65.00
Residual Charge Per Lift	€12.80	10.90
Brown Bin Charge Per Lift	€4.50	4.90
Green Bin	€3.50 (new charge)	Free
Alternative Flat Fee (still available)		
Fee per month	€24.92	€21.50

1.1.3 Do you think most waste collection service offerings are broadly the same? Is the consumer’s choice of provider influenced by factors other than price (e.g. frequency of service, consumer interface, etc.)? If so, are these important considerations for a consumer? Please explain your answer

We believe most service offerings are the same with the exception of glass collection and brown (food waste) bin collection. For food waste, recent EPA statistics show a continued rise in tonnages collected⁹ although it is noted that the data is from both household and non-household sources. The data presented does not provide details on the quantity of food waste captured in the bins and whether this is being optimised.

We believe most collectors in the household waste collection market have improved customer interaction and information communication offerings. Service providers use mobile phone and web based technology to facilitate collections and payments. However we don’t believe the availability of these improvements are sufficiently strong to influence consumer choice. We believe the primary driver remains price for consumers. For example despite collectors agreeing in principle to pay by use, “use based” flat fee structures (see **Figure 1-1**) are being offered to the market. These service products included fee bands (see **Figure 1-2**) where the consumer is informed of the expected annual fee (subject to them staying within set weight limits) or monthly all in fees (again subject to weight controls).

See Our Competitive Prices

We provide services to the people of **Dublin, Kildare, Meath and Wicklow.**

Select your county to view our competitive prices.

Wicklow

Eco Band	Pay Per Lift
€258 Per Annum	€10.90 for a general waste bin lift €4.90 for a compost bin lift
€21.50 per month	€65 upfront Annual Charge
Bi-Weekly collection of general waste, compost and recycling bins	Recycling bin is free of charge * * Account must be in credit
Price per general waste bin lift based on weight up to 40kg per month. Excess charges of €0.25 per kg over 40kg per month	Top up your account online or via our smartphone app
<input type="button" value="SIGN UP"/>	Price per general waste bin lift based on weight up to 40kg per lift. Excess charges of €0.25 per kg over 40kg per lift <input type="button" value="SIGN UP"/>

Figure 1-1 Alternative Flat Fee Structures

The weight limits and conditions are a nod to use based fees but the strategy is to provide the consumer with a defined amount so they know what they will pay. We believe this is a flat fee system by another name and undermines effective and incentivised use based charges. Alternative flat fee models will do not sufficiently encourage diversion of materials to recycling bins or reduction in waste generation. Both of these outcomes are primary policy targets for Ireland and the European Commission.

⁹ <http://www.epa.ie/nationalwastestatistics/composting/>

<u>Item Description</u>	PIN: 2845
Service Period: 01-01-2018 to 31-12-2018	
Service Band C	320.00
Charge is based on weight produced in 2017 701-1000 kg	

Figure 1-2 Extract from Household Waste Collector Invoice Showing Fee Band Pricing Structure

1.1.4 In your opinion what would a well-functioning competitive household waste collection market look like in Ireland? For example, number of players, market shares, margin levels, levels of switching, number of operators in any given area/route. Is this in evidence in the market(s) in which you have experience? Please explain your answer.

The current market is fractured and is leading to an inequitable system with environmental, social and economic concerns. These concerns have been identified for some time both at a National and Regional level which the market is failing to address. Recent market failure have required emergency legislation to be implemented to ensure safe management of household waste. The market requires improved regulation to protect consumers, waste producers and the environment from multiple operators servicing the same geographical area.

We believe it is necessary to establish a structured market place to deliver a well-functioning household waste collection market. We believe to achieve this the introduction of a franchise bidding model is required. The benefits of such of model are well stated by the Competition Authority (2005, 2011) OECD (2008) and the Irish Government (2012). The switch to such a model has been recommended for Ireland in the International Review of the Irish Waste Market (Eunomia 2009). The move to a franchise model will allow for current imbalances to be resolved while ensuring competition, efficiencies and environmental performance standards are delivered.

We recognise that the household waste collection market in Ireland in has unique characteristics that require careful consideration if franchise bidding is to be successfully implemented. It is difficult to address the question as it relates to number of players, market shares, margin levels, levels of switching, number of operators in any given area/route. The introduction of a franchise bidding process must attempt to be equitable to as many service providers as possible while delivering the required environmental performance. Some steps which may ensure this outcome are:

- The issuing of tenders on a phased basis to maximise participation and give plenty of opportunity to existing service providers to bid for contracts.
- The contract length should be sufficiently long to realise a positive rate of return on the service provider's investment whilst ensuring that no service provider monopolies are generated. This can be achieved by re-tendering frequently and maximising the number of competing tenderers. A timescale in the region of 5 years has found to be appropriate in other countries.
- Ensure market lots are sized correctly to allow for existing service providers to bid alongside competitors (new) while maximising service efficiencies to reduce household charges.

1.1.5 What in your opinion is the most effective method of market entry? For example, this could be setting up an entirely new household waste collection service, acquiring an existing operator, setting up a joint venture. Please explain your answer.

Currently we contend the most effective method of entry into a new geographical markets is through acquisition. Local markets are generally well established with settled service providers. There has been no new entrants to the market from the UK or beyond. We understand Bryson Waste considered entering the Irish market but decided against it due to the open nature of the Irish market. Since 2010 there has been consolidation in many geographical markets across the country. The following are examples of major acquisitions of household waste collectors which have occurred. We expect this trend to continue with a small number of dominant players serving the majority of householders in the market.

Ireland's Waste Market is About to Get Smaller as Panda is Cleared for Greenstar Takeover (<http://www.thejournal.ie/greenstar-panda-merger-greyhound-2-2931847-Aug2016/>)

Mr Binman Sold to Waste Consortium (<https://www.rte.ie/news/business/2012/0419/317725-mr-binman-sold-to-waste-consortium/>)

Loss of 50 Jobs at GreenClean
<https://www.independent.ie/regional/fingalindependent/news/loss-of-50-jobs-at-greenclean-27813789.html>

1.1.6 When an operator is considering entering a new market is the possibility that the incumbent operator could respond by also entering the new entrant's existing markets a key consideration? What are the main factors (e.g. densely populated routes) that are assessed to decide whether the potential of a new market will compensate for the possibility of also losing market share in an existing market? Please explain your answer.

We believe existing waste collectors can better answer this question. There appears to be limited activity in geographical markets in terms of collectors entering into a competitors market. This may be due to recent policy changes (pay by use, landfill levy increases, brown bin etc) and a collectors reluctance to invest in new areas due to high upfront investment costs (trucks, extra staff, bins, depots etc). It is a feature of the market that waste collectors without facilities are dependent on competitors which is a significant barrier and consideration.

1.2 OPERATIONAL BARRIERS TO ENTRY (A NEW TOPIC)

1.2.1 Are there any features which are unique to specific local authority area markets that make entry less attractive? Please explain your answer

We believe that counties and areas with a low population density are less attractive for the provision of collection services. In **Appendix A**, we have a series of household waste collection data maps prepared by RPS for the regional waste management plans. These maps shows the rate of collection coverage in each local authority area in 2012 (there has been no new publicly available data published

to allow an update. The CCPC may be able to source data for 2016 through the EDEN reporting system for this study). The maps shows a low level of collection coverage in local authorities with the lowest population density.

1.2.2 What are the barriers to entry to a potential new entrant in a given local authority area market in Ireland (e.g. difficulties in customer switching, access to necessary treatment and transfer facilities, regulatory requirements, or other market characteristics.)? Are any of these disproportionate? Please explain your answer

See response to Question in **Section 1.1.6**.

1.2.3 What impact, if any, would a concentrated market (e.g. where there is only one or two major household waste collectors) for a local authority area have on the decision to enter such a market? Please explain your answer.

We believe in such a scenario the likelihood of entering such a market is low and there is evidence to support this statement. The Dun Laoghaire Rathdown Collection Market has been principally been serviced by two large collectors from 2010 onwards as referenced in **Section 1.1.2**.

1.3 MARKET COVERAGE

1.3.1 What is your view of the assessment of the current number of households which do not avail of a kerbside waste collection service in Ireland/the area in which you have experience? Please provide any data, analysis, or reports which support your answer.

The CCPC are reporting that 23% of households are not availing of a household waste collection coverage. This is not surprising to RPS as this has been a long term issue in Ireland which we appear to making little head way. **Table 1-2** provides historic data on this subject from 2003 – 2011. This data was collated from the EPA National Waste Reports covering the period and presented in a paper on the Irish Waste Collection Market at an International Waste Conference, a copy is included in **Appendix B**. This rate of coverage is below the EU-27 average of 97% population coverage reported for 2009¹⁰.

Table 1-2 demonstrates the significant variation in the level of collection coverage across the municipal authority areas in the State. The lowest coverage rate reported for each year is shown, highlighting the scale of the coverage problem in some areas. In areas with low coverage a significant number of householders have opted out of a direct service in favour of bring waste directly to waste facilities or sharing bins with other householders. Activities such as illegal dumping and backyard burning are also present across the State and are more a concern in areas of low collection coverage. This unaccounted waste is a significant environmental concern, as it is suspected that most of this waste is subject to backyard burning¹¹. This low level burning of waste is hugely damaging; it has been reported that backyard burning is the single biggest source of dioxins released in Ireland, accounting for 75% of the total amount.

¹⁰ Generation and treatment of municipal waste, Eurostat, statistics in focus, 2011

¹¹ Department of Environment, Community and Local Government (2012), Regulatory Impact Analysis of the Household Waste Collection Market. Dublin: DECLG.

Table 1-2 Collection Coverage in the Household Waste Collection Market 2003 -2011¹²

Year	National Coverage %	Lowest Coverage %	Municipal Authorities Market Share %
2003	79	45	n/a
2004	77	n/a	48
2005	76	48	52
2006	73	47	53
2007	80	55	48
2008	80	35	43
2009	81	45	40
2010	71	37	35
2011	70	37	16

Operators in the market have made little progress on the issue of collection coverage. Less densely populated areas are more expensive to serve and in a competitive household waste collection market, operators are unwilling to expand routes into unprofitable and costly areas. It is difficult to see this pattern changing in the short-term.

Finally the impact on achieving future policy targets will be significantly impacted by the lack of kerbside collection systems to so many households. A kerbside service allows and encourages proper source separation and effectively eliminates a risk of poor management choices (such as dumping or burning). Self management by households does not deliver the same level of separation and recycling rates will suffer. As policy pushes target rates higher, for example the European Commission is expecting Member States to achieve recycling rates of 65% by 2030, it will become increasingly difficult (with the current arrangements) for Ireland to achieve and progress to these levels. We will suffer from a failure to capture all of the household waste generated in the system regardless of the kerbside collection systems in place.

1.3.2 What in your opinion are the main reasons why households do not avail of a kerbside waste collection service? Are there some areas which do not have access to a waste collection service? If so, why is this the case?

We believe the main reasons why household do not avail of a kerbside collection service include:

- Self-management to avail of cheaper alternatives through the use of public civic amenity facilities or PTUs (typically lower levels of separation are achieved resulting in higher residual waste quantities compared to households with a source separated kerbside collection). Householders

¹² The privatisation of the household waste collection market – can the market deliver? Paper By Warren Phelan, Presented at International Waste Symposium Conference 2013

who chose this option through the use of local authority civic amenity facilities may be benefiting from local government fiscal support as many such facilities lose money and are subsidised from general Council incomes. For example the Bray Recycling Centre is free to use by householders and accepts a significant range of non-hazardous wastes¹³ which other householders are paying for collection.

- Use of street bins; and
- Mismanagement of waste through engaging with illegal/non-compliant waste collectors, backyard burning and illegal dumping;

We believe there are areas in Ireland which do not have access to a collection service, principally remote locations with isolated populations. Some local roads may not be suitable for standard waste collection vehicles to access. For communities like this alternative solutions are needed. These are less likely to be introduced under the current arrangement where cost is the principle decision driver.

1.3.3 For those consumers who do not/cannot use a household waste collection service, in your opinion are there adequate facilities for centralised waste disposal (e.g. civic amenities, direct to landfill, Pay to use compactors etc.) in Ireland/the area in which you have experience? Please explain your answer

We don't believe there is adequate coverage of civic amenity facilities available for householders who are self-managing their waste in this manner. The maps provided for in **Appendix C** show the civic amenity facilities which are active in each of the three waste regions (Eastern-Midlands, Connacht Ulster and Southern). The background map shows the population density of each area in Ireland. The maps show there are parts of every region which do not have an accessible civic amenity facility, in particular the Connacht Ulster Region and central parts of the Eastern Midlands Region.

We don't believe PTUs are a comparable alternative to a kerbside collection, in fact they undermine kerbside collection. Most facilities we have witnessed do not have separate containers for recyclables and food waste. We believe the provision of these in urban areas is encouraging some householders to abstain from a proper kerbside service. These units will not help to support or policy ambitions or targets. In line with Policy E23 in the regional waste plans the use of these units should only be used for specific circumstances.

Policy:

E23. In the absence of kerbside source segregated collection services and where the proximity of the civic amenity facilities and bring centres is prohibitive the plan supports localised collection solutions such as community drop-off points or pay-to-use systems subject to compliance with the household waste collection regulations.

¹³ <https://www.wicklow.ie/Living/Services/Environment/Recycling-Waste-Management/Recycling-Reduction-Reuse/Recycling-Centres/bray-recycling-centre-542>

Does the structure of competition in the market (i.e. side-by-side competition, or tendering for the market) have an impact on household participation in the kerbside waste collection market? Please explain your answer

Yes refer to answer provided in Section 1.3.1.

1.4 WAIVER OF WASTE COLLECTION CHARGES

1.4.1 What local authorities currently operate a waiver, or other form of discount scheme, and what household qualification criteria is currently used for the selection of households which qualify for a waiver scheme?

Not possible to answer this; regional waste management offices are in a better place to comment.

1.4.2 Do you think that a national waiver scheme should be introduced? Please explain your answer.

The introduction of competition for the market or franchise bidding nationally offers the opportunity to implement an effective national waiver system. At present waiver systems are operating inconsistently. Most local authorities do not have the power to reimburse private waste operators directly for collecting waste from households that would otherwise qualify for waivers although some local authorities have an arrangement whereby households served by private waste collectors apply to the local authority directly for a waiver.

In the increasingly competitive market where a number of private operators are competing side by side, some private operators around the country are including their own waivers to households to enable them to extend their dominance in an area. However this is not universal. The result of the above is that there is inherent inequity in how waivers are applied nationally and in how certain less well off citizens are serviced with an inadequate or in some cases no waste collection service.

1.4.3 What are the potential issues with the implementation of a national waiver scheme?

The major issues are cost and control to avoid abuse. For a waiver system to work effectively and consistently at national level it should be funded and implemented centrally. If an appropriate mechanism cannot be found at national level to implement the waiver it should at least be funded centrally, ideally through the tax system to ensure fairness and equity of implementation. This would also ensure that the standing charge in any particular region with a high level of waivers did not become excessive. The fund could then be apportioned and implemented/applied regionally by the local authorities.

The treatment of low-income households with respect to the payment of waste charges was not addressed in primary waste legislation issued in 1996. At this time, charging of householders for waste collection was not commonplace. From 2000 onwards, waste collection charges were introduced by an increasing number of municipal authorities. The application and waiving of charges to low-income householders became an issue that needed to be address. The Protection of the Environment Act passed in 2003, which amended the primary waste legislation, set out a legal provision, specifically

Section 53, for municipal authorities regarding the waiving of all or part of a waste charge on the grounds of personal hardship. However, this provision is not mandatory; it is at the discretion of the municipal authority.

This anomaly led to a waiver scheme being offered by some municipal authorities, while other authorities did not put in place a scheme. Data in a report¹⁴ prepared by the Ombudsman in 2008 and highlights the then disparity in the application of waiver schemes to householders across 23 municipal authorities investigated in Ireland. Of the 23 surveyed, 7 did not provide a waiver scheme to householders. The report shows the different qualifying criteria put in place by municipal authorities for householders. This led to inconsistency across the system with a household qualifying for a waiver in one area, not being eligible for one in a neighbouring county. From the outset this discretionary legal provision created an inequitable system which has not been addressed and continues today.

1.5 LANDFILL AND INCINERATOR CAPACITY

1.5.1 Is there adequate capacity (landfill and incineration) to deal with Ireland's current and future residual waste generation? Please support your views with relevant data, analysis, or experience.

The current regional waste management plans contain an extensive analysis of the waste treatment market in Ireland including landfill and thermal recovery (includes incineration) capacity. This analysis concluded that an additional 300,000 tonnes of thermal capacity was required for the treatment of municipal waste (household waste is part of the municipal waste stream making up about 60%). This is in addition to the existing authorised capacities (i.e. facilities which had planning and licensing consents). The existing situation is as follows:

Table 1-3: Active and Pending Capacity for the Thermal Recovery of MSW

Thermal Recovery Activity (Number of facilities)	Active (Tonnes)	Pending ¹⁵ (Tonnes)	Total (Tonnes)
Waste-to-Energy (2)	820,000 ¹⁶ (1)	(1)	820,000
Cement Kilns (3)	215,000 (2)	127,875 (1)	342,875
Pyrolysis (1)	-	65,000 (1)	65,000
Total (6)	1,035,000	192,875	1,227,875

This need for extra capacity has been determined by analysing future projections to 2020 and to 2030 and making realistic assumptions. By 2020 municipal waste generated in Ireland is forecast to grow

¹⁴ Ombudsman (2008), Waste Waiver Schemes Administered by Local Authorities, A Report of an Investigation by the Ombudsman. Dublin: Ombudsman.

¹⁵ The pending capacity refers to an authorised but unbuilt capacity. Only capacity with planning permission and EPA licences has been included.

¹⁶ The active capacity refers to the Indaver and Covanta Waste-to-Energy facilities.

to between 3.0 and 3.2 million tonnes. The lower forecast was selected for the purpose of determining the capacity need as it takes account of the proposed prevention target as set out in the plan. A growth factor of 2.5% was applied for the period 2020 to 2030 with a national waste generation figure of 3.9 million tonnes estimated by the final year (2030). It has been assumed that Ireland will achieve its 50% municipal recycling rate target by 2020, from the current national recycling rate of 40%, with linear incremental growth over the plan period. Increases to the rate of recycling at the same rate are projected to 2030, with a rate in excess of 60% ultimately being reached. It is assumed that landfill is being phased out over the period, with the level of future activity related to the development and utilisation at thermal recovery facilities and other factors such as the landfill levy price. There is contingency built into the projections, with lower level quantities of uncollected waste used in the projections than reported in the plan. In summary the capacity need is considered balanced and in keeping with the overall strategic approach of the plan.

Relevant policies from the waste plans are E15a which is focused on municipal waste, refer to **Figure 1-3**.

The 300,000 tonne available capacity is likely to be taken up by a combination of applications for treatment facilities in the system (new Incinerator proposed for Ringaskiddy, additional capacity being sought by Cement Plants in Meath and Limerick). The final decisions on these is expected in 2018. We expect that Ireland will have sufficient thermal capacity (including incineration) for the future. It is important that the cap stipulated in the waste plans is respected to ensure the rate of recycling is not put at risk.

In terms of landfill the waste plans correctly point out that there has been a permanent shift away from landfilling nationally). The number of active facilities accepting non-hazardous municipal waste in the country is currently 4, but will reduce to 3 by 2019. The waste plans are clear with the intention to follow European and national policy and continue to move waste away from landfill. The local authorities support this policy ambition. The local authorities anticipate there will be an ongoing need for landfill capacity during the current plan period for processed residual wastes. The slowdown in recycling tonnages nationally and delays to thermal recovery capacity coming on-stream has impacted by sustaining volumes of residual waste going to landfill. This has led to a shortfall in disposal capacity and required emergency legislation to ensure safe management of residual wastes.

There is also a need to maintain a contingency supply, in response to potential situations which pose a risk to the health and well-being of citizens, livestock and the environment. The current market arrangements do not provide for contingency to deal with such scenarios. This needs to be examined as part of this review by CCPC.

Policies:

E15a. The waste plan supports the development of up to 300,000 tonnes of additional thermal recovery capacity for the treatment of non-hazardous wastes nationally to ensure there is adequate active and competitive treatment in the market and the State's self sufficiency requirements for the recovery of municipal waste are met. This capacity is a national treatment need and is not specific to the region. The extent of capacity determined reflects the predicted needs of the residual waste market to 2030 at the time of preparing the waste plan. Authorisations above this threshold will only be granted if the applicant justifies and verifies the need for the capacity, and the authorities are satisfied it complies with national and regional waste policies and does not pose a risk to future recycling targets. All proposed sites for thermal recovery must comply with the environmental protection criteria set out in the plan.

E15b. The waste plan supports the need for thermal recovery capacity to be developed specifically for the on-site treatment of industrial process wastes and where justifiable the treatment of such wastes at merchant thermal recovery facilities.

E16. The waste plan supports the development of up to 50,000 tonnes of additional thermal recovery capacity for the treatment of hazardous wastes nationally to ensure that there is adequate active and competitive treatment in the market to facilitate self-sufficiency needs where it is technically, economically and environmentally feasible. The capacity is a national treatment need and is not specific to the region. All proposed sites for thermal recovery must comply with the environmental protection criteria set out in the plan.

Figure 1-3 Waste Plan Policy E15a

1.5.2 In your view is there adequate capacity to deal with Ireland's current and future non-residual waste generation? Please support your views with relevant data, analysis, or experience

Our view is that the rate of recycling has stagnated significantly under the current market structure. The data reported by the EPA shows that our rate of recycling (for municipal waste) has stagnated; in 2011 this was 41%, in 2012 it was 40% in 2014 it had increased to 41%. Our national rate is now less than the European average and significantly behind the leading performers which are recycling in excess of 60%. Ireland's position on the European recycling table has declined, while other Member States are improving we are going backwards (see Eurostat data on municipal waste).

The current market structure which is overly focused on price is impacting on our ability to capture recyclable wastes (both materials and food waste). The inconsistency of our source separate system in terms of rollout of 3-bins, pricing, awareness and enforcement is limiting the potential of the system. Contamination rates have increased significantly in the last number of years with some collectors reporting level of over 30% in the green recycling bin. This is a clear indication of a collection system/model which is not working well. Our future targets are to achieve a rate of 50% by 2020 by 2030 a rate of 65%, both are unlikely under the current market structure.

In **Appendix D** we have included a series of case studies on local household waste collection market which were prepared in 2007 by RPS. The evidence from the latest available data, provided in the regional waste management plans, the household maps listed in **Appendix A**, and by the EPA indicates that the situation has not improved in these markets. Collection coverage for many areas are less than the national average, rollout of brown bin collections is extremely mixed and in some places at low levels. The lack of improvement in these areas is resulting in little improvement in the level of recycling.

1.5.3 Does the structure of the household waste collection market (side-by-side competition, or tendering for the market) have an impact on investment in landfill and incineration facilities? Please explain your answer.

1.5.4 Is access to a sufficient long-term volume of waste a key factor in the development of appropriate waste management and treatment capacity (e.g. requirement for long-term supply arrangements to facilitate investment in treatment facilities)? Please explain your answer.

Yes we believe long term access to a sufficient volume of waste is necessary for the development of treatment facilities. The lack of security of supply for treatment hinders the development of final treatment facilities such as biological treatment facilities, materials processing facilities and other medium to large scale treatments. For example the biological treatment PPP project for the processing of food waste collapsed due to supply issues. In Northern Ireland where the Council controls the waste the development of Anaerobic Digestion facilities (i.e. biological treatment facilities) has been supported through long term supply contracts and financial supports. This jurisdiction has stolen a march on Ireland with the EPA reporting that 32% of the brown bin waste collected, transported north of the border for treatment.

It is important to recognise that the high utilisation of the merchant thermal recovery capacity in Ireland is due to the landfill levy. These facilities set their price point below the gate fee at landfill and exports. The absence of a levy would be a significant risk to these facilities.

1.5.5 In your opinion, what impact will the current array of incentivised charging structures by operators have on Ireland's residual waste generation and waste streaming by households? Please explain your answer

See response in Section 1.1.2

1.6 REGULATORY ENVIRONMENT

1.6.1 In your view are consumers adequately protected by the current regulatory environment (e.g. regulation of operator conduct, adequate complaints resolution procedures, ability to switch to an alternative provider, transparency of pricing etc.)? Please explain your answer.

We don't believe householders are adequately protected

1.6.2 What impact, if any, do the current household waste collection permit regulations relating to the weighing of household and apartment waste have on the decision to enter a specific market? Please explain your answer.

In our experience we have found the household waste collection permit regulations and implementing conditions to be weak in terms of delivering national and waste plan policies. For example the provision of a food waste collection service was a condition in waste collection permits stretching back to 2007 (in the Dublin Local Authorities). The presence of the condition did not drive the rollout of the brown bin as hoped. A condition requiring collectors to assess the suitability of apartment complexes for the brown bin services has been in place since 2010 and was not implemented. Similarly collection permit conditions requiring incentivised pay-by-weight systems have proved to be ineffective.

Similar issues have occurred in many other regions. Refer to the Galway City Collection Market case study in **Appendix D**.

History in the waste sector has shown to bring about change statutory instruments are required in the current open market arrangement. For example the notable increase recently in brown bins for the collection of food waste is due to the introduction of the household food waste regulations (2015).

1.6.3 What impact, if any, do the current household waste collection permitting regulations and food bio regulations¹⁷ have on the number of household waste collection operators in the State? Please explain your answer.

We don't believe the household waste collection permitting regulation and food bio regulation are having any significant impact on the number of household waste collectors in the state. It is relatively straightforward to obtain a collection permit and begin operating. The provision of a food waste collection service is principally due to enforcement rather than voluntary regulatory compliance.

1.6.4 What impact, if any, has the introduction of the new regulations which effectively prohibit the offering of flat-fee charging structures had on market entry by operators? Please explain your answer

It is possible too early to answer this. In **Section 1.1.3** we identified the some collectors in the market have begun to offer alternative "use based" flat fee structures (**see Figure 1-1**). These service products include fee bands where the consumer is informed of the expected annual fee (subject to them staying within set weight limits) or monthly all in fees (again subject to weight controls). The weight limits and conditions are a nod to use based fees but the strategy is to provide the consumer with a defined amount so they know what they will pay. We believe this is a flat fee system by another name and undermines effective and incentivised use based charges. Future enforcement of these charging systems may prohibit implementation but we don't consider the current regulations as acting as a barrier to market entry.

1.6.5 What are your views of the roll-out of a dedicated bin for organic household waste in Ireland? Please support your answer with experience or relevant data.

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We have been long term supporters of the rollout of the organic household waste collection service and prepared many policies for regional plans to push its rollout. Our experience is that it has taken a very long time to get to the current level and the service is still not optimised. For many years from 2011 – 2014, private collectors strongly resisted the rollout of the service despite national and regional policy. The benefits (environmentally and economically) were not explained to consumers who viewed it as an extra cost. In the last 18 months there has been improved awareness raising about the service which is helping. Citizens are also more conscious of food waste in general. However there appears to be a reluctance by some service providers to push the service. In communication with a major waste collector on this issue we were informed that householders are “offered” the service (i.e. it is optional which the householder can select online) and they can refuse. In other words the collector doesn’t provide the bin mandatorily. This appears to contradict national policy and the recent statutory instrument. If this loop hole exists it needs to be addressed as it is damaging to the future success of the service.

1.6.6 The current waste collection permit regulations apply to waste collected from households and apartments. In your view, what, if any, enhancements to the current regulations would be appropriate for apartment collection? Please explain your answer.

Our answer in Section 1.1.4 is also relevant.

1.6.7 In your opinion, what impact could tendering for specific markets (i.e. competition for the market) have on the household waste collection market in Ireland? Please explain your answer.

Our answer in Section 1.1.4 is also relevant to this question. In summary believe competition for the market will have long-term benefits as the country transitions to a circular economy model. Such a transition will require greater levels of recycling to be achieved as our waste are increasingly viewed as valuable resources. The quality of our secondary waste materials will become the key issue in terms of identifying and securing long-term outlets for recyclables. If price is the dominant driver in our market above all else it makes achieving our policy objectives and future high-bar mandatory targets.

We support competitive tendering for waste collection services to increase collection coverage and reduce the quantity the uncollected waste, ensuring a high quality household waste collection service is available to households.

Access to a modern, effective and efficient waste collection service is a fundamental right of society and the provision of such has a significant positive impact on society. The local authorities are obligated under the Waste Management Act, 1996 as amended, to collect or arrange for the collection of household waste and efforts have been made in many regions of the country to increase collection coverages, albeit with mixed success.

A new franchise bidding system should be structured to ensure that all households, within reason, are served. However the public also have responsibilities and one such responsibility is to avail of such a service when offered. All occupied households produce waste if even just a small amount of residual waste. For the system to operate at its most efficient and cost effective the marginal cost of serving all householders must be covered. Sharing should not generally be acceptable as it potentially allows for wholesale opting out of the system. Where households produce limited waste, a smaller bin is an

option. An effective waiver system will be needed to cover low income households. Where a household does not avail of a service and does not qualify for a waiver they should be required to give a statutory declaration or other justification of how their waste is managed.

1.6.8 In your opinion, are the current regulatory and enforcement regimes in the household waste collection market adequate? What, if any, changes to these regimes would be appropriate? Please explain your answer.

The following changes to existing regulatory regimes are proposed as part of a reorganisation of the structure of the collection market:

- Great transparency of waste collection prices – information could be held by an independent consumer body such as CCPC or CRU.
- Regional Waste management office to have a statutory status to drive implementation of the regional waste management plans and policies (which are effectively national policies).
- Regional waste management office to have the ability to direct waste to resolve emergency issues;
- A levy on each kg of residual waste produced by householder which is ring fenced for the waste management offices to fund awareness, research and education on source separated kerbside collection systems
- An annual published list of non-compliant household waste service providers and householders who engage in illegal waste activities;
- Appointment of a dedicated body (a national office led by a local authority or a regional waste office or government unit) to address the issue of household waste collection at apartments and to address the significant inadequacy of the current systems.

APPENDIX A

Household Waste Collection Service Data Maps

(Source – Regional Waste Management Plans)

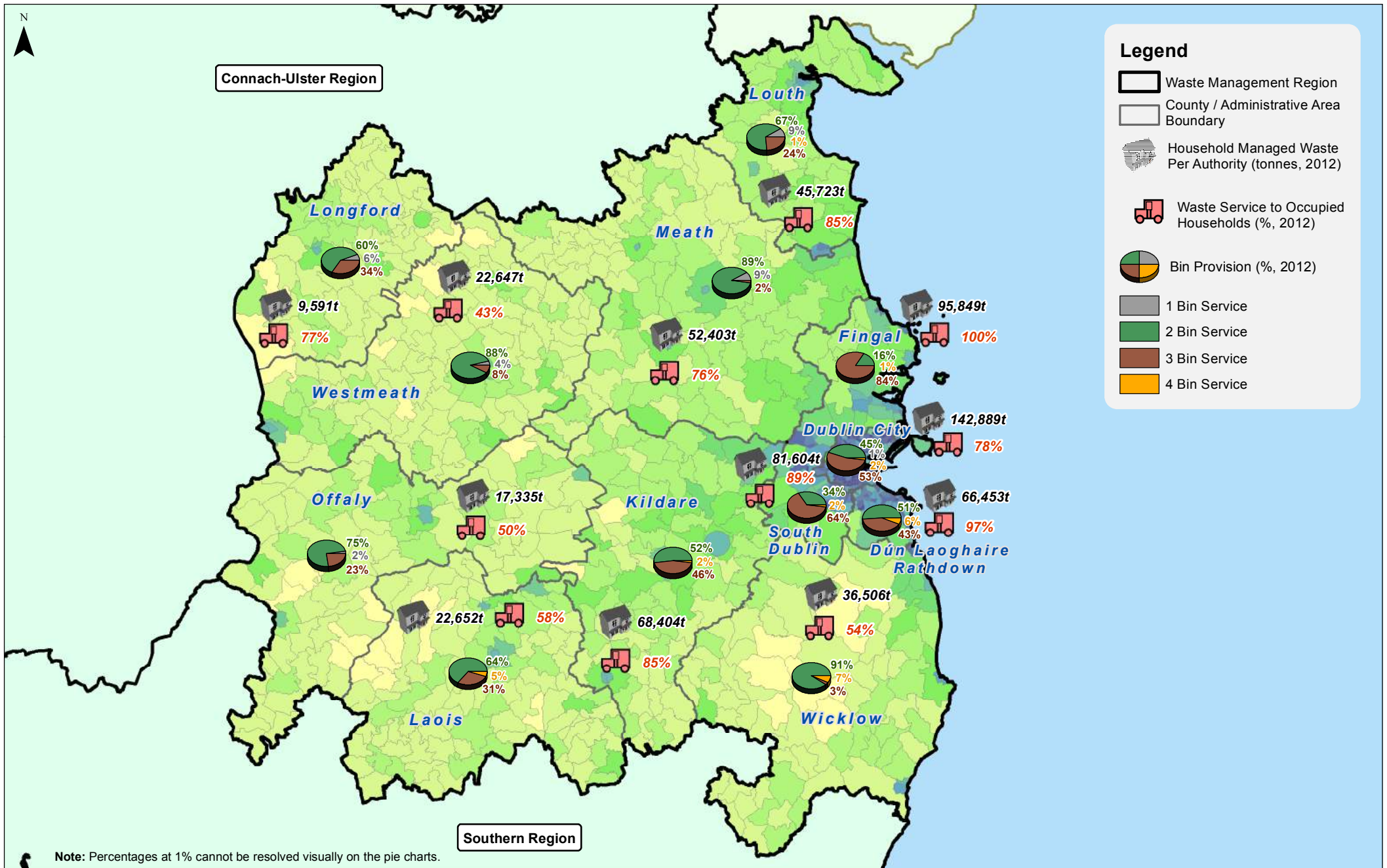


Figure 9-3 Waste Services in the Eastern-Midlands Region

Legend

-  Waste Management Region
-  County / Administrative Area Boundary
-  Household Managed Waste Per Authority (tonnes, 2012)
-  Waste Service to Occupied Households (% , 2012)
-  Bin Provision (% , 2012)
-  1 Bin Service
-  2 Bin Service
-  3 Bin Service
-  4 Bin Service

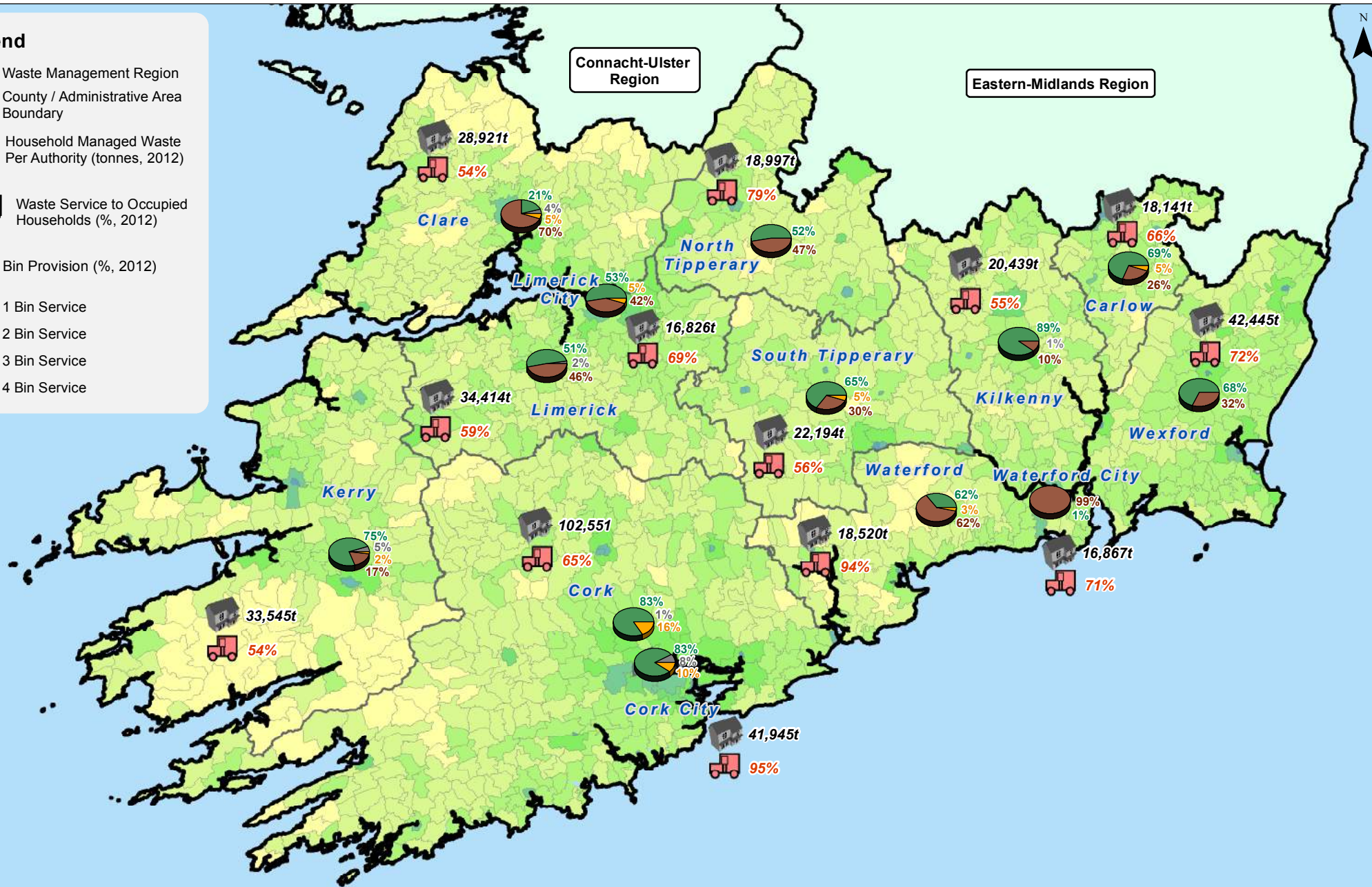


Note: Percentages at 1% cannot be resolved visually on the pie charts.

Figure 9-5 Waste Services in the Connacht-Ulster Region

Legend

-  Waste Management Region
-  County / Administrative Area Boundary
-  Household Managed Waste Per Authority (tonnes, 2012)
-  Waste Service to Occupied Households (% , 2012)
-  Bin Provision (% , 2012)
-  1 Bin Service
-  2 Bin Service
-  3 Bin Service
-  4 Bin Service



Note: Percentages at 1% cannot be resolved visually on the pie charts.

Figure 9-4 Waste Services in the Southern Region



APPENDIX B

RPS Paper (2013) on the Irish Household Waste Collection Market

Presented at International Waste Symposium Sardinia 2013

THE PRIVATISATION OF THE HOUSEHOLD WASTE COLLECTION MARKET – CAN THE MARKET DELIVER?

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SUMMARY: The household waste management market in Ireland has gradually transformed over the last ten years from a market that was primarily serviced by the municipal authorities to one which is now dominated by private operators. It is expected that by the end of 2013 the collection of household waste by municipal authorities will have ceased entirely. The open nature of the Irish household waste collection market is almost unique in Europe for such a utility service. The arrangement of the household waste market in Ireland has been the subject of lengthy debate and often, conflict, between industry representatives, municipal authorities and politicians. The market structure has been the subject of environmental, economic and social reviews by many institutions and agencies including Government, the Irish Competition Authority, the Organisation for Economic Co-Operation and Development (OECD), and international experts, each charting a way forward. The future success of the market will be measured by its ability to deliver a resource-efficient and cost-effective system which meets European and National targets. Achievement of this will depend, to a large extent, on private operators in the market and their response to market regulation and enforcement. The implementation of household waste collection policy goals, which cover environmental, economic and social objectives, is uncertain at this time.

1. INTRODUCTION

The household waste collection market in Ireland has gradually transformed over the last ten years from a market that was primarily serviced by the municipal authorities, to one which is now dominated by private operators.

The privatisation of the collection market has not been a long-term policy for the Irish State, even though the privatisation of the market is almost complete. The move to a privatised market has happened in a piecemeal manner over an extended period of time as municipal authorities involved in the collection of household waste took the decision to exit the market at different times and for specific (and different) reasons.

Privatisation of the market has not been accompanied by guidance from central government. Regulation to manage the transformation and structure of the new market was not put in place to ensure waste policy objectives were achieved. Privatisation has been set against a backdrop of contentious debate regarding the future role of municipal authorities and private sector operators in the waste sector and in particular, in the household waste collection market.

Ireland is facing a critical period in the implementation of its sustainable waste management policy as the State aims to move away from the overuse of landfilling, become more resource efficient, and meet European and National targets. The capabilities of a fully privatised household waste collection sector to deliver in the household collection market on environmental, social, and cost effective grounds is uncertain and will be examined as part of this paper.

2. MARKET DEVELOPMENT AND CHARACTERISTICS

2.1 Overview of the Household Collection Market

The household waste collection market in Ireland was unregulated until the State brought into force primary waste legislation (DECLG, 1996) in 1996. At this time household waste collections were primarily completed by the municipal authorities¹ in the State, although even at this time some local authorities in smaller, more rural counties were no longer providing collections. In these areas local private collectors were serving householders, although their activity was very limited.

The household waste collection market of the mid-1990s in Ireland is unrecognisable compared to today's market. Household waste collected by the municipal authorities was brought to the local 'dump' or landfill for disposal. Collections were generally undertaken at no charge to the householder and there was no separate kerbside collection of recyclable materials. There was no regulatory framework for waste management collections or disposal facilities and authorities received very little (if any) funding from central government for waste services. By the mid-1990s a crisis point had been reached and the State needed to modernise the waste management sector in line with best international standards.

Following the introduction of that primary piece of waste management legislation in 1996, the State brought into force regulations structuring the waste sector. The household waste collection market became increasingly regulated and began to evolve in line with Ireland's new waste policy (DECLG, 1998) objectives. The rollout of segregated kerbside collection schemes began to increase, charges for waste collection services were introduced and awareness of waste management issues became more widespread. The regulatory framework introduced for household collections did not restrict private operators from the market, provided the appropriate authorisation² was obtained. As previously noted, in certain rural areas, private collectors were and remained the sole provider of collection services.

The level of household waste recovered in 1998 stood at 3.2% (EPA 2000). At this stage, kerbside collection of recyclables was operating at a very low level with trial schemes operating in Dublin and in other parts of the country. The rollout of separate collections began to increase from 2000 onwards and by 2005 schemes were operating in 33 of the 34 municipal authority areas (EPA 2005). Private sector operators operating in the household waste collection market at this time also implemented segregated collection systems. To drive increased diversion from the residual bin, there was no visible charge to the householders for the collection of the recyclable bin. This decision helped to enhance the quantity of recyclables collected from households, which were sorted at facilities into streams for sale into national and international recyclables markets. The buoyant prices paid for recyclables by international markets for most of the 2000s provided a significant financial support to the Irish household collection market. The dry recyclable collection has been successful in diverting household waste from residual waste and, in 2011, 24% of the waste collected at the kerbside was through this system (EPA 2013). The latest data shows that 94% of serviced households were part of a 2-bin collection system.

In 2004 municipal authorities further expanded the segregated the kerbside collection scheme to householders with the introduction of a separate collection for organic waste material e.g. food and garden waste. The rollout of this collection system has been steady, but coverage has never equalled that of the dry recyclables collection scheme. This is despite the government signalling a clear policy direction for the rollout of the organic bin in 2008 (DECLG 2008). This policy

¹ In Ireland the municipal authorities consist of 29 County Councils and 5 City Councils.

² Waste collectors are required to obtain an authorisation in the form of a waste collection permit issued by the municipal authorities. Municipal authorities involved in collection are not required under the regulations to obtain a collection permit.

direction document was put on a statutory footing with the passing of the household food waste regulation in 2013, which requires rollout of organic bins to all households across the State in agglomerations greater than 500 persons. In 2011 the EPA reported that 37% of the serviced households in the State were availing of the organics waste collection service. The rollout of brown bins has been primarily driven by municipal authorities to date; three authorities alone provided over 220,000 bins in Dublin, with private operators less reluctant to provide this service for cost reasons. The participation and collection of material from this service is low relative to the cost to provide the service, and unlike the recyclable collections, there is no revenue to be generated from the collected material.

The cost of waste management to municipal authorities increased rapidly as landfill facilities were brought up to standard and collection infrastructure was developed. Towards the end of the 1990s waste charges were introduced by many municipal authorities who moved to implement the ‘polluter pays’ principle and increase cost recovery for waste collection and treatment³ services. By 2004 it is estimated that local authorities spent €400 million on municipal waste disposal, more than four times higher than in 1996. In 2005 the implementation of pay-by use charging systems for waste management collection services in the household sector became mandatory (DECLG, 2004), although by this time many municipal authorities were already charging for waste collections. Three mechanisms were acceptable to implement pay-by-use: pay-by-weight, pay-by-volume and a tag-a-bin system. The fundamental principle underlying each scheme was to provide an incentive-based charging system to householders for collection, which rewarded segregation of waste and diversion of material from the residual bin. Many variations of these schemes were implemented across the State at this time in response to this policy direction.

The level of public awareness of waste collection and recycling issues was almost absent in the late 1990s. Illegal dumping and backyard burning were on-going problems, with little understanding of the environmental consequences of these activities. Similar widespread knowledge of the benefits of recycling was limited. The government implemented a national public campaign, ‘Race Against Waste’, to raise awareness of waste issues and change the behaviour of householders with an emphasis on source segregation and recycling. The campaign was funded through the centrally managed environmental fund and delivered clear messages to the public over a sustained period. It was further supported by municipal authorities through hundreds of local events and activities. The campaign, which ran from 2003 to 2006, had a lasting impact on recycling in Ireland – particularly for the dry recyclables collection scheme.

2.2 Peculiarities of the Collection Market

The Irish household collection market is unique in comparison to collection markets for this waste stream in the Europe Union. The fundamental difference in the Irish market relates to the ownership of household waste and its subsequent collection. Unlike collection markets in all other Member States (DECLG 2012) the ownership of household waste is legally prescribed to the householder and not to the municipal authority. This idiosyncrasy of the market allows private collectors to compete and collect household waste in the collection market alongside municipal authorities i.e. in an environment of side-by-side competition. This peculiarity of the market has shaped the market and the role of municipal authorities and private collectors.

The primary piece of waste legislation introduced in 1996 states the ‘holder’ of the waste is responsible for the ‘*treatment of waste*’ or to ‘*have the treatment handled by a dealer or an establishment or undertaking which carries out the waste treatment operations or arranged by a private or public waste collector*’. In other words, a householder owns the

³ At this time the main treatment was disposal to landfill with the State landfill 91% of its municipal waste in 1998.

waste until it is transferred to a service provider engaged to collect the waste on their behalf, or to a service provider providing treatment of the waste. Unusually, this arrangement removes the obligation on householders to have a direct collection service at their house, instead they can choose to deliver their waste to a facility for treatment e.g. landfill or recycling centre. Essentially, this provision within the law allows for householders to opt out of collection services in favour of ‘self-management’ of waste.

Under this primary waste management law, specifically Section 33 Collection of Waste, the municipal authorities are required to ‘*collect or arrange for the collection of household waste within its functional area*’. This provision does not require authorities to provide collection services directly but to arrange for services which can be carried out by contracting private collectors to collect on their behalf or by ensuring that there are private collectors authorised to collect household waste in their area. From the outset the regulated waste collection market did not require municipal authorities to provide household waste collections.

Municipal authorities have increasingly ceded the household collection market to private collectors. The ability to charge for waste, the rise in quality standards driven by European and National regulation, the increase in waste provision costs and the unwillingness or inability of municipal authorities to deliver services has led to a gradual increase in the role and market share of private collectors, see Table 1.

Many municipal authorities were active in the market and competed side-by-side with operators until recently. However, from 2009 the market share of municipal authorities fell to 40% (EPA, 2011) and since then has fallen sharply to 16% by the end of 2011. The ability of private sector operators to deliver services at a lower cost, coupled with their entitlement to exit the market, has reduced to three the number of active municipal authorities collecting household waste in 2012. By the end of 2013 it is expected that no municipal authority will provide collection services and the market will be fully privatised.

Table 1: Transformation of the Household Collection Market

Year	Number of Municipal Authorities Providing Household Collections	Municipal Authorities Market Share %
2005	19	52
2006	17	53
2007	17	48
2008	15	43
2009	14	40
2010	13	35
2011	13	16
2012	5	<4 (est)
2013	4	<2 (est)

The waste legislation passed which led to the creation of the household collection market in the mid-1990s attempted to accommodate the characteristics of the existing collection market rather than re-define the market. Historically, collection coverage in the household market has been quite weak and there does not appear to have been a time when all households in the State were provided with a collection service. The provision in law which facilitates householders to opt out of collection services and municipal authorities to withdraw from services has exacerbated the coverage issue. Table 2 shows the extent of collection coverage in the household market from 2003 – 2011. The EPA data, taken from the annual national waste reports for reporting years 2003 to 2011, shows that coverage in the market is declining with the lowest rate of coverage recorded in 2011. The fluctuations in the data reflect the poor quality of waste data in the early stages of this time period and the availability of accurate and up to date housing data.

Table 2 also demonstrates the significant variation in the level of collection coverage across the municipal authority areas in the State. The lowest coverage rate reported for each year is shown, highlighting the scale of the coverage problem in some areas. In areas with low coverage a significant number of householders have opted out of a direct service in favour of bring waste directly to waste facilities or sharing bins with other householders. Activities such as illegal dumping and backyard burning are also present across the State and are more a concern in areas of low collection coverage.

Table 2: Collection Coverage in the Household Collection Market 2003 - 2011

Year	National Coverage %	Lowest Coverage %	Municipal Authorities Market Share %
2003	79	45	n/a
2004	77	n/a	48
2005	76	48	52
2006	73	47	53
2007	80	55	48
2008	80	35	43
2009	81	45	40
2010	71	37	35
2011	70	37	16

In tandem with the State’s weak collection coverage, the problem of uncollected household waste has long been a feature of the Irish household collection market. The failure to provide each household with a collection service has led to this situation. The level of uncollected waste reported in Ireland is estimated each year by the EPA and is the quantity of waste which is disposed of through illegal dumping or burning. This calculation does not include household

waste that is self-managed by the householder, whereby a householder who does not have a collection service takes residual and recyclable wastes directly to a local civic amenity facility and or landfill.

The data in Table 3 demonstrates the scale of the problem, which the DECLG described as being at ‘unacceptable levels which must be improved to protect Ireland’s environment’. The available data shows that the problem continues to persist, with the highest level of uncollected waste recorded in 2011 at over 276,000 tonnes (which is 20% of the managed household waste). The problem appeared to be receding with a notable drop in the estimate of uncollected waste from 2007 to 2009. However, the estimate reported in 2010 is not directly comparable to these previous years as the method of estimation changed and the new data on the national housing stock became available.

The available data indicates that illegal burning is the main activity by which this category of waste is being disposed. Dioxins resulting from the burning of household waste at low temperatures are extremely damaging to public health and the environment. Illegal dumping is an issue in certain parts of the country, but does not account for the estimated tonnage of uncollected waste.

Table 3: Extent of Uncollected Household Waste 2002 - 2011

Year	Total Household Waste Managed Tonnes	Estimated Quantity of Uncollected Household Waste Tonnes	% Of the Total Managed
2002	1,528,314	248,768	16
2003	1,596,501	287,294	18
2004	1,500,798	227,374	15
2005	1,543,468	202,940	13
2006	1,773,242	205,474	12
2007	1,625,490	135,678	8
2008	1,556,879	120,459	8
2009	1,498,469	128,000	9
2010	1,420,706	265,681	19
2011	1,406,576	276,665	20

Since the introduction of waste management legislation and policy in Ireland, a policy of source segregation has been instrumental to the management of household waste collection. National policy statements (DECLG, 1998 & 2002) introduced in 1998 and 2002 affirmed the States commitment to source segregation of recyclable materials from the residual waste stream. From 2002 onwards the kerbside collection of waste from householders was enhanced, with municipal authorities providing householders with separate bins for the collection of residual and recyclable wastes. Private sector operators followed and by 2005 most householders receiving a

collection service were part of a 2-bin collection system, and a small number were part of a 3-bin system.

Table 4 shows the extent of 1-bin, 2-bin and 3-bin systems in place in Ireland from 2008 to 2011 (data is not readily available for the preceding years). Data for the 2011 shows that 98% of householders served with a collection service are receiving at least a 2-bin collection service. The remaining 2%, which represents 26,631 of those households being provided with a service, are still on a 1 bin system. A number of these are apartment complexes, which can be difficult to provide expanded collection services to, due to space restrictions. The rollout of the 2-bin and 3-bin collection systems has been critical to growing the household waste recovery rate, which has grown from 6% in 2001 to 47% in 2011. The collection of recyclables at the kerbside is the largest fraction of recovered waste with the segregated collection of organics not at the same level of penetration or participation. National policy has directed public and private collectors to provide for the collection of organics from households since 2002 with a reinforcement of these objectives in 2006. Municipal authorities began rolling out schemes in 2004 but implementation was on a very gradual basis. Private operators have been even less reluctant to provide separate collections, which are perceived to be costly and inefficient, and this has led to an imbalance, with some households in the main urban centres having a 3-bin system, and many householders in less densely populated areas remaining on a 2-bin system. The government has remained committed to the rollout of the organic collection service and in 2013 passed a statutory regulation setting out a mandatory implementation roadmap for this service.

Table 4: Segregated Collections in the Household Market 2002 - 2011

Year	1-bin only %	2-bin only %	3-bin only %	Recovery Rate %
2001	n/a	n/a	n/a	6
2002	n/a	n/a	n/a	9
2003	n/a	n/a	n/a	13
2004	n/a	n/a	n/a	19
2005	n/a	n/a	n/a	22
2006	n/a	n/a	n/a	22
2007	n/a	n/a	n/a	26
2008	5	74	21	26
2009	4	72	24	30
2010	5	61	34	41
2011	2	61	37	47

The establishment of the legal framework for the household waste collection from the mid-

1990s formalised the principle of the 'polluter pays' principle in Ireland. At this time many municipal authorities were either not charging for waste collection, or were charging a nominal amount which did not reflect the full cost of providing the service to householders. The principle has been an important policy-driver for Ireland and its implementation became more widespread from 2000 onwards. The State recognised that in order for waste charges to be an effective environmental and financial instrument, they must incentivise the diversion of materials from the residual bin. International and Irish research (O'Callaghan et al 2007) carried out has shown that pay-by-weight is the most effective, usage-based system, followed by volume-based systems, with flat rate systems the least effective. A policy direction was introduced and required all waste collectors, public and private, to move away from flat rate charging for waste collection and to introduce a use-based system of waste charging from 1st January 2005.

Ireland's move to implement the polluter pays principle through a direct household charge was a bold move and required significant support through awareness and information campaigns. Householders gradually accepted the new system and the OECD, in a report on the waste management system in Ireland (OECD, 2008), commented that 'Ireland's application of the polluter pays principle would probably be a good model for other countries to follow'. Despite the government's desire for effective pay-by-use waste charging systems to become the norm in Ireland a high rate of implementation was not achieved and flat rate systems continued to be offered to householders. The lack of a legal statutory instrument to reinforce the requirement for specific PBU systems allowed for ineffective waste charging systems to remain and be offered to householders in part of the country. A national study (O'Callaghan et al, 2011) carried out in 2010 found that 46% of those householders contacted were continuing to avail of flat rate waste charging mechanisms. Despite the State's policy and aim for incentivised waste charging across the household level, a mix of effective and ineffective systems remain.

The treatment of low-income households with respect to the payment of waste charges was not addressed in primary waste legislation issued in 1996. At this time, charging of householders for waste collection was not commonplace. From 2000 onwards, waste collection charges were introduced by an increasing number of municipal authorities. The application and waiving of charges to low-income householders became an issue that needed to be address. Legislation (DECLG 2003) passed in 2003, which amended the primary waste legislation, set out a legal provision, specifically Section 53 of the Act, for municipal authorities regarding the waiving of all or part of a waste charge on the grounds of personal hardship. However, this provision is not mandatory; it is at the discretion of the municipal authority.

This anomaly led to a waiver scheme being offered by some municipal authorities, while other authorities did not put in place a scheme. The data in Table 5 (Ombudsman 2008) is from 2007 and highlights the disparity in the application of waiver schemes to householders across 23 municipal authorities investigated in Ireland. Of the 23 surveyed, 7 did not provide a waiver scheme to householders. The table also shows the different qualifying criteria put in place by municipal authorities for householders. This led to inconsistency across the system with a household qualifying for a waiver in one area, not being eligible for one in a neighbouring county. From the outset this discretionary legal provision created an inequitable system which has not been addressed since.

Table 5: Review of Waiver Schemes in 23 Municipal Authorities (2007)

Council	Waiver Scheme	All low Income Households	Low Income OAPs	Tax Exempt Households	Means tested only
Carlow County Council	<input checked="" type="checkbox"/>				
Cork City	✓	✓			
Cork County	✓	✓			
Donegal County Council	<input checked="" type="checkbox"/>				
Dublin City Council	✓			✓	
Dun Laoghaire /	✓	✓			
Final Council	✓			✓	
Galway City	✓	✓			
Galway County	<input checked="" type="checkbox"/>				
Kerry County	✓	✓			
Kildare	✓	✓			
Kilkenny County	<input checked="" type="checkbox"/>				
Limerick City	✓	✓			
Limerick County	✓				
Louth County	<input checked="" type="checkbox"/>				
Mayo County	<input checked="" type="checkbox"/>				
South Dublin	✓			✓	
Waterford City	✓	✓			
Waterford County	✓				✓
Dungarvan Council	✓		✓		
Westmeath	✓	✓			
Wexford County	✓	✓			
Wexford Borough	✓	✓			

3. A MARKET UNDER REVIEW

The nature of the household collection market in Ireland has led to much discussion between stakeholders as to the best approach to deliver a cost effective market that meets environmental and social goals. National reviews have been undertaken by the government, the Competition Authority, Economic and Social Research Institute, the Ombudsman, waste operators and local authorities, and international organisations, most notably the OECD. A summary of their key findings are outlined in this section.

3.1 Government Reviews

In 2009 the government at the time undertook an extensive review (Eunomia et al. 2009) of the management of waste in Ireland. The aim of the review was to assess waste management planning, practises and procedures in the State and to inform future waste policy in Ireland. The collection of household waste was examined as part of this review.

On the household collection market the review commented that the market configuration was ‘unusual...by international standards’ when referring to the fact that local authorities and private collectors can compete side-by-side for customers. The review concluded that the uncertainty about the role of municipal authorities and private operators in the collection market was leading to cost inefficiencies, damaging recycling rates and was also hindering the development of treatment facilities in the ‘absence of guarantees of waste’. The review made the recommendation that the household waste collection be ‘made the responsibility of local (municipal) authorities’ who would provide the service directly or contract out the service. This reconfiguration would allow for ‘similar or greater environmental quality to be attained at lower cost’, as well as requiring ‘all household to avail themselves of the available waste collection service’. The new set up would also benefit the implementation of proper use-based charging systems, a waiver system and the planning and development of new waste facilities.

The review completed in 2009 was followed by the publication of a discussion document (DECLG, 2011) on the household waste collection market. The government sought views on the proposal to reconfigure the market, removing side-by-side competition in favour of the competition for the market. The views of all stakeholders were sought and fed into the preparation of a Regulatory Impact Analysis (RIA) (DECLG, 2012). This analysis is the most comprehensive investigation into household waste collection and provided the government with a clear view on market.

Its conclusions were unambiguous and it found the current regulatory system to be ‘incomplete and imperfect’ and does not serve the government’s objectives. The market failings, or potential failings, can be classified as ‘environmental, economic and social’. The analysis found that the ‘current system of regulation could be fairly described as laissez faire in many respects’ and the existing model of regulation for the market ‘is not sustainable’. The report indicates that the choice for the government was to either introduce ‘franchise bidding’ and reconfigure the market, or to maintain the existing setup albeit within a stronger regulatory framework. The government recognised that a move to competition for the market structure was more ‘optimal’ but decided to ‘preserve the current market structure’ and so avoiding the transaction and implementation costs associated with altering the market.

3.2 Competition Reviews

The Competition Authority in Ireland is the state body tasked with enforcing Irish and European competition law. In 2005 the Authority carried out a detailed investigation (Competition

Authority, 2005) into whether a waste company operating in the household waste collection market was abusing its dominant position and charging high charges to householders. The report decision included an assessment of the household waste collection market, following which the Authority concluded it was 'not working well for consumers'. The Authority's view (then) was that Ireland should look at international experience for collection service provision, and recommended that competition for the market 'should replace the existing model'.

In 2011 the Authority reviewed its previous forceful position 'slightly' in a submission (Competition Authority, 2011) made on the government's discussion paper on the household waste collection market. The Authority still recognised that in theory competition for the market is a better outcome, however. it also raised the possibility that switching to this model has 'pitfalls', primarily associated with the structuring of the markets and tendering process, which would need to be expertly managed. The Authority went further, expressing the view that 'there may be merits in retaining side-by-side competition', particularly in areas of high-population density. The Authority's view is solely focused on the competition aspects and does not address the impact on environmental or social objectives of the service in the market.

3.3 Economic Reviews

The OECD carried out a public management review of Ireland in 2008 and as part of this work, a case study on local waste management was completed. The OECD's study concluded that 'failure to use existing tools to regulate and manage competition have led to a situation in which no one is satisfied'. The corollary of these set of circumstances, 'it is the public that loses', with 'less efficient' collection services, 'uneven treatment' of households in terms of collection coverage, and waivers and potential 'risk of missing' environmental goals. The OECD recommended, among other measures, that Ireland implements 'contractual arrangements' that requires a service provider 'to deliver on sustainable development objectives such as broader environmental goals and universal service'. They sounded a word of caution, stating that 'changing the rules all at once will have a potentially destabilising impact' and even though the 'current system is clearly underperforming', the 'cost of changing the system could become greater over time'.

In 2010 the policy think-tank the ESRI carried out an economic analysis of municipal waste management policy in Ireland (Gorecki et al, 2010). Their view is that the objective of public policy is to maximise 'societal welfare', which means the societal benefits (including environmental benefits along with cost options need to be considered. The ESRI set out a road map for an economically efficient municipal waste management policy. They pointed out that the existing market had failures and that government intervention is merited to address them. This includes the assigning of 'exclusive rights' to municipal authorities in the household waste collection market as an appropriate measure to deliver competition for the market through competitive tendering. The ESRI view is that this move would realise 'substantial increases in collection with householders benefiting through lower collection prices'. They strongly advised that 'all levels of government should aim to avoid creating unnecessary policy and regulatory risk'.

3.4 Municipal Authority and Operator Reviews

In 2008 the municipal authorities in Dublin decided to vary the regional waste management plan, investing the ownership of household waste from single dwelling households in the public authorities. The variation wording (Dublin City Council et al, 2008) allowed for the authorities to directly collect or arrange for the collection, through competitive tendering, of household waste. The decision to vary the waste plan followed environmental, technical and economic

reports on the nature of the market. The findings of the reports raised concerns for the authorities which included the:

- Increase in environmental nuisances caused from multiple waste collectors servicing routes
- Higher costs to householders due to multiple collectors servicing the same areas and routes
- Loss of revenue to authorities preventing the development of facilities, impacting on waste enforcement and awareness campaigns, and the provision of services to waiver customers

The variation to the waste plan changed the collection market in Dublin, although its implementation was blocked by a legal challenge. The challenge focused on the anti-competitive nature of the variation and was upheld by the Irish High Court in a judgement issued in December 2009 (McKechine, 2009). The judgement overlooked the environmental and social concerns in favour of preserving competition in the market. The judgement had wide-reaching implications for municipal authorities, many of whom decided to exit the market following the decision.

In 2007 the largest waste operator in the Irish market commissioned a report (Eunomia et al., 2007) which looked at important issues in the waste sector. On the issue of household waste collection the report states the market is 'unusually free' and is characterised by high costs, mixed payment structures, and a lack of waste flow security for waste treatment facility developments. The report suggested that the DECLG 'needs to consider whether the existing institutions governing the market for waste collection are the right ones' to ensure the market will 'deliver the right balance of outcomes in terms of performance and cost'.

3.5 Social Reviews

The Combat Poverty Agency is a statutory body in Ireland whose aim is to eliminate poverty and social exclusion. In 2003 the Agency produced a report (Combat Poverty Agency, 2003) which looked at the impact of waste collection charges on low-income households and the waiver system available. The Agency conclude that waste management policy 'should be influenced by both environmental and social concerns', while also noting that waste charges solely based on the polluter pays principle is 'regressive, posing a major burden for low income households'. The Agency called on the government to introduce a 'national waiver scheme' for waste collection charges, with guidelines drawn up ventrally in association with poverty and community groups. This report was followed up in 2005 when the Agency published a report (Combat Poverty Agency, 2005) setting out how municipal authorities may implement a waiver system. The guidelines proposed to address the inconsistency in waste charging across the municipal authorities, while enshrining the effectiveness of pricing systems to reduce waste to all sectors in society. The Agency recommended that a centrally funded waiver scheme should be implemented by all municipal authorities. It also examined the implantation of waivers where private waste collectors are providing household collection services, and concluded that there are legal barriers preventing authorities from offering waivers where they are not providing collection services directly and similarly, payments cannot be made to private operators in lieu of a waiver.

In 2008 the Ombudsman, who is tasked to investigate complaints from members of the public who believe that they have been unfairly treated by certain public bodies, completed a report (Ombudsman, 2008) highlighting inequity and unfairness in the administration of waiver schemes for waste charges. The Ombudsman found that the increasing privatisation of the market is leading to a loss by municipal authorities of social obligations, such as serving low-

income householders and waivers and concluded there are ‘unresolved issues relating to the regulation of the waste management sector and the question of a public service obligation’. The report calls on the DECLG to ‘revisit the policy approaches’ to ensure ‘commercial, environmental and social policy obligations’ can equally be met.

4. MARKET ANALYSIS

This section analyses the performance of the transformed household waste collection market from an environmental, economic and social perspective to determine if the market can deliver on the policy goals which the government has set. The analysis has been limited to existing data, reports and studies that have been completed on the market to date.

The performance of the market from an environmental perspective needs to examine specific aspects, including its progress towards achieving national and European targets, the rollout of source segregated collections and environmental pollution caused from illegal dumping and backyard burning of household waste.

Key environmental targets for all Member States are set down in the European Landfill Directive (1999/31/EC) and the European Waste Framework Directive (2008/98/EC). The recycling target, Article 11(2) (a) in the Waste Framework Directive, of 50% is well on track with the national rate currently at 45% (EPA, 2013), highlighting the ability of the market to deliver on specific collection objectives - specifically the high collection rate of packaging and other dry recyclables from householders. Hence the analysis will focus on the targets of the Landfill Directive.

The Landfill Directive requires, among other things, Member States to progressively reduce the quantity of biodegradable municipal waste being sent to landfill over a series of three target years. In 2011 household waste was the largest fraction of municipal waste in the State, making up 56% of the stream. For Ireland the target quantities are 916,000 tonnes by July 2010, reducing to 610,000 tonnes by July 2013 with a further reduction to 427,000 tonnes by July 2016. The July 2010 target was achieved, with Ireland landfilling 860,000 tonnes, approximately 50,000 tonnes less than the target quantity. The latest annual national waste statistics report (EPA 2013) confirmed that Ireland was on course to meet the 2013 target. However, the 2016 target according to the report remains ‘at risk’. The diversion of biodegradable household waste away from landfill has been driven in the main by the landfill levy, a well-established economic instrument which has become an increasingly effective force in the Irish waste market. The levy was increased to €50 per tonne in 2011, to €65 per tonne in 2012 and rose to €75 per tonne in July 2013. The levy has artificially raised the price of landfill with the aim of moving residual waste to preferred treatment options. In response, operators in Ireland are mechanically pre-treating residual waste to reduce the ultimate quantity sent to landfill and or repackaging the waste for export. Private operators in the household market are availing of low treatment prices for residual waste at waste-to-energy/incinerators and cement kilns in Europe and as a consequence processed and unprocessed household residual waste is increasingly being shipped from Irish ports. The continued reliance on overseas facilities for the treatment of residual waste is set to continue and Ireland’s ability to meet the 2016 target will certainly depend on these outlets, as indigenous residual treatment options such as waste-to-energy or sophisticated mechanical biological treatment facilities, are unlikely to be in place in time.

The source segregation of recyclables and organic waste from the mixed household waste stream is a key plank of household waste policy and an important implementation measure in the delivery of European targets. The rollout of a separate bin for household dry recyclables has been a success with 269,382 tonnes of this material collected in 2011. Implementation is at a

very high level, with the collection available to 98% of householders on a service. This collection service is important in the context of diverting biodegradable household waste from the residual bin and ultimately landfill. Equally so is the provision of a separate bin for the collection of organic waste from householders at source, which has been set down in waste policy (DECLG, 2006) and legislation. The implementation of this service has been poor by comparison to the recyclables collection, with only 37% of householders having the service resulting in over 77,000 tonnes of organics collected in 2011. The poor implementation of this policy measure forced the government to introduce a legal regulation (DECLG, 2013) setting out a mandatory rollout plan for this collection service from 2013 to 2016 with larger urban centres to be phased in first. It is not clear if this plan will succeed. The collection service is expensive to operate with no guarantee of tonnages. In areas that have the service, participation and capture rates of this material is low when compared to dry recyclables. Householders are not well-informed in terms of the need for the organic bin and most view the service as an extra unnecessary cost. This, coupled with many operators disincentivised pricing of the service, has led to bins being not used or returned by householders in certain areas. The introduction of the statutory instrument is certainly no guarantee that the service will be implemented on a widespread basis. In 2009, a statutory instrument (DECLG, 2009) was introduced for the collection of organic wastes from commercial premises in Ireland. By 2011 over 75,000 tonnes of organic waste was collected from commercial premises. The EPA estimates that this represents approximately 25% of the available commercial organic waste and indicates that the implementation of the statutory instrument is not occurring on the ground to the extent possible. In summary, a question mark hangs over the future effectiveness, certainly by the 2016 target year, of the organic waste collection service in terms of contributing to Ireland's diversion target through the diversion of food waste and green waste from the residual bin. Private operators within the market have either resisted or been slow to implement such a collection, primarily for cost reasons. In fact, many private operators have inherited organic waste collection services from Municipal Authorities exiting the market and the success of this transition is yet to be revealed. The current market's stance on the service is unlikely to change in the short-term unless enforcement and regulatory measures are more stringently applied and awareness of the service is radically improved.

In 2011 the level of uncollected household waste was estimated to be 276,665 tonnes. This figure is calculated from different data, including the existing collection coverage, bin sharing estimates and the amount of household waste self-managed by households i.e. taken directly to facilities. The low level of collection coverage nationally, relative to European Member States, is contributing to this issue. This unaccounted waste is a significant environmental concern, as it is suspected that most of this waste is subject to backyard burning (DECLG, 2012). This low level burning of waste is hugely damaging; it has been reported that backyard burning is the single biggest source of dioxins released in Ireland, accounting for 75% of the total amount. Operators in the market have made little progress on the issue of collection coverage, as shown by the data in Table 2 which shows that in 2011 collection coverage had fallen to its lowest level in a number of years. Less densely populated areas are more expensive to serve and in the highly competitive household waste collection market, operators are unwilling to expand routes into unprofitable and costly areas. It is difficult to see this pattern changing in the short-term. In the context of Landfill Directive targets the level of uncollected waste needs to be monitored as the State's reporting against these targets is based on the quantity of waste collected and managed. The uncollected waste does not come into consideration. Improving the collection coverage will bring more waste into the system, which will need to be diverted and recovered to ensure targets are met (DECLG 2012). Similarly an increase in the coming years in the generation of household waste, which has decreased significantly from 2008, would bring more waste into the system and put more pressure on targets. The latest waste report (EPA, 2013) is forecasting an increase in

municipal waste generation of 830,000 tonnes by 2025.

The most significant environmental target outside of the European target is the long-term ambition of eliminating the use of landfill by 2020. This objective, set by the Irish Government, compliments the European Commission's aim for a more resource efficient Europe (European Commission 2011) to be delivered by Member States by 2020. This goal would certainly be a challenge for household waste, with over 750,000 tonnes disposed of in 2011. To achieve this, an enhanced regulatory environment will need to be introduced, as well as possible further increases to the landfill levy or the implementation of a landfill ban.

In its policy statement for household waste collection, the government has recognised that there are underlying social goals to be achieved. The government desires a high-quality collection service to householders and for as many households as possible to have access to such a service. The target number of household for this service has not been defined. As previously stated, the level of collection service in the household market stands at 70% which has been termed as 'unacceptable' (DECLG 2012). In addition, there is an inconsistency of service to householders with 2% on a 1-bin service, 61% on a 2-bin and 37% on a 3-bin system. The level of uncollected waste in the market stands at over 276,000 tonnes. The reality of the service contrasts starkly with the State's ambition. The quality of the existing 'universal' collection service is inconsistent, imbalanced and inequitable. The available data indicates that operators in the current market regime will unlikely be able to, or have the resources to, address these problems in the immediate future.

The issue of waste collection charge waivers has been well debated in Ireland. Important public bodies, such as the Combat Poverty Agency and the Ombudsman, have argued that a national waiver scheme and qualifying guidelines are required. The government reported that in 2012 over 109,000 households were in receipt of a waiver. The gradual withdrawal of the municipal authorities from the collection market means that there are less waiver recipient households than ever before, and the numbers will continue to fall. Private operators in the collection market do not offer waivers to households, notwithstanding those operators who have taken over municipal authority collections and have agreed to honour waivers until a fixed date. Equally, public authorities are not by law allowed to reimburse a private operator in lieu of collection services provided to waiver customers. In terms of social policy goals, the current set up in the collection market is failing in its ability to serve low-income households and the existing regulatory environment does not appear to be equipped to manage this problem. In recognition of the failings of the current market, an inter-department working group has been set up to chart the way forward for the provision of services to low-income households. This group is due to report to the Government by the end of 2013.

The occurrence of backyard burning is due to different influencing factors, including personal behaviour, lack of a collection service and lack of awareness. The expansion of the existing collection coverage would certainly go some way towards addressing this problem. However, coverage in the market does not appear to be growing, as collectors are unwilling (or unable) to serve more remote householders. Cost is certainly an issue, the lack of a regulatory provision requiring all households to be served is another. Backyard burning remains a significant issue for the household waste market and this activity has social implications as well as environmental ones. The release of dioxins poses a serious risk directly to public human health and the following list of potential emissions and potential health effects from this anti-social activity:

- Dioxins and furans – toxic and can cause cancer.
- Volatile organic compounds (VOCs) – respiratory and heart illnesses
- Polycyclic aromatic hydrocarbons (PAHs), – known causes of cancer.

- Carbon monoxide (CO) – ground level ozone.
 - Hexachlorobenzene (HCB) – cancer, kidney and liver damage.
 - Nitrogen oxides (NOx) – contribute to acid rain.
 - Microscopic particles – lung damage.
 - Ash, which may contain hazardous metals such as mercury, lead and arsenic.

Dioxin emissions also pose a risk to public health indirectly through the food chain. The EPA monitors annually the level of dioxins in cow’s milk and the results indicate that the levels recorded in Ireland compare well to other Member States. Nevertheless, the continuing problem of backyard burning is a failing of the State to protect human health and conflicts with the subject matter and scope of the Waste Framework Directive, which requires the ‘protection of the environment and human health by preventing or reducing the adverse impacts of the generation and management of waste’.

The economic policy goals of the collection market focus on minimising the price of collection paid by householders commensurate with the achievement of environmental objectives and sustaining a competitive market.

Data from the Irish Central Statistics Office shows that the Consumer Price Index (CPI) for the cost of household waste collection shows that prices increased by a factor of 6 from 1998 to 2007 (DECLG, 2012). Between 2007 and 2011 prices fell slightly and an increase was recorded in 2012, see Table 6 for details.

Table 6: Consumer Price Index – Price Growth for Household Waste Collection 1998 to 2012 (2006 is the base year)

Year	‘98	‘99	‘00	‘01	‘02	‘03	‘04	‘05	‘06	‘07	‘08	‘09	‘10	‘11	‘12
CPI	17	24	28	38	45	54	68	94	100	105	105	105	102	98	100

A report commissioned by the Irish Waste Management Association stated that collection charges had decreased by an average of 26% from 2004 to 2011, despite the increases recorded in the CPI. In areas where private collectors competed with or have taken over from municipal authorities, there is evidence that lower costs to householders have resulted. However, this is not a consistent theme across the country and charges can vary significantly across the State, due to many factors such as economies of scale and density. There have been concerns expressed that side-by-side competition in the market is fundamentally cost inefficient as household waste collection is, according to the economic literature, a natural monopoly and markets are best served by a single operator. The government’s international review on waste management suggested that approximately €80 per household could be saved by moving to a competition for the market structure. Similarly, the RIA carried out the by government undertook a detailed examination of the cost of collection to householders in the market and concluded that ‘altering the structure of household waste collection markets would result in lower prices for many households’. There is currently no consensus as to whether side-by-side competition and the increased role of private collectors has delivered lower waste costs to the householder and it is not known the extent to which competition for the market would lower costs further.

The degree of competitiveness of the household collection market is similarly difficult to answer. The Competition Authority, in a submission on the future of the market, is of the view that side-by-side competition in the market has grown substantially since 2005 with a significant

increase in the number of private collectors entering the market. According to the Authority competition has increased between participants, especially in the higher density areas, although they recognise that the available data is poor and other factors along the treatment chain can affect charges. The national consumer agency (National Consumer Agency 2012) has also examined the movement of households between operators in the market and the results show a high level of consumer inertia in the market with only 3% of the householders switching service provide in the last 12 months. The RIA prepared by the government identified the need for more information to be gathered to establish fully if competition is working and the Competition Authority have been requested to maintain an oversight on the market on a regular basis with a detailed analysis to be provided in 2016.

A review of the market indicates there are many different waste charging systems on offer to householders. Flat rates systems not only remain present, but according to research completed are being taken up by 46% of households. In 2005 the government introduced a pay-by-use system as a replacement for ineffective flat rate systems. Eight years on and it is clear that these pricing systems continue to be widely used in the market. This pricing structure appeals to householders who are made aware of the cost they are going to pay at the commencement of the contract period with a collector. It also appeals to collectors who chose to offer this system, as they will have lower administrative and collection equipment costs. However, these systems provide no environmental or financial incentive to the householder to divert waste from the residual bin to recycling bins. The current regulatory structure needs to be revised if incentivised pricing is to become standardised.

The issue of backyard burning, which appears to be prevalent in the current market set-up, is also unfairly burdening Irish householders, who pay for their waste, with indirect costs. Backyard burning can lead to higher risk of public health issues as a result of increased dioxins in the atmosphere and society bears the cost of treating persons affected by any resulting illness. Similarly, illegal dumping, which can increase due to poor collection coverage rates, burdens compliant householders with the indirect costs of clean ups. The current market set-up is failing to address these persistent problems and the resulting externalities are being borne by those householders who continue to act in accordance with the law. The need to remedy these problems and reduce the cost to society is pressing.

5. CONCLUSIONS

The household waste collection market in Ireland is almost entirely privatised and its structure is unique when compared to the other Member States of the EU. The make-up of the market has been the subject of much debate, wide reaching consultation, national and international reviews and a legal challenge.

The household collection market has evolved dramatically since its creation in the mid-1990s. The market was never perfect to start with and many of its peculiarities were accommodated and retained rather than being removed. Householders are the legal owners of their waste and this critical provision in law sets the market apart from almost all other Member States. The market had a degree of side-by-side competition, with private collectors present in the market from the very beginning. The privatisation of the market has been more gradual than a fundamental policy decision taken by government and carried out at a specific time. The transformation has occurred slowly over the last decade, as municipal authorities have exited the market and private collectors have taken their place. Many of the peculiarities of the market have remained and have caused market failings of an environmental, social and economic nature. These include a high population of unserved households, an inconsistent implementation of the national policy of

pay-by-use charging, substantial uncollected waste, high environmental pollution from backyard burning of household waste, no consistent approach to servicing low-income householders and burdening compliant members of society with indirect costs due to these failings. From an environmental view, the market is on track to meet landfill diversion targets as the landfill levy continues to drive waste away from disposal. The effectiveness of the levy is supported by low-cost treatment options in mainland Europe, where Ireland's residual household waste is increasingly ending up. The development of national recovery facilities, replacing disposal capacity, has not been established as required and in its absence exporting residual waste for recovery is flourishing. There is an inherent risk to this approach of managing waste; the State remains vulnerable to international treatment price increases and secure end destinations could become unavailable in the future.

Despite the documented failings of the market, the latest national waste policy statement issued by the government decided to retain the existing side-by-side market configuration, albeit with tighter regulatory controls to be put in place to address many of the failings. This regulation has yet to materialise and the market continues to operate in an unaltered form. The combined environmental, economic and social goals set by the government for the collection market will be a challenge for the privatised market to deliver, even with new regulation that will require strict and consistent enforcement. The number of operators in the market has increased and in some parts of the country competition is strong. The focus for private collectors, like all businesses, is to keep costs low, remain competitive and viable in a busy market place. Issues such as waivers, backyard burning, universal collection schemes and incentivised pricing will add cost to collection services if implemented fully. These issues will remain unresolved within the current market structure while cost remains the primary focus for operators. It will fall to central government to put in place a workable system to address these failings and the coming years will determine if the side-by-side competition market structure can deliver on all fronts. Seventeen years on since the creation of the household collection market and regulatory uncertainty still remains.

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APPENDIX C

Coverage of Civic Amenity Facilities and Population Density



Legend

Waste Management Region



Town

Facility Type

Private

Public

Population Density by ED (2011)

- 1 - 10
- 11 - 30
- 31 - 100
- 101 - 300
- 301 - 500
- 501 - 1000
- 1001 - 2000
- 2001 - 3000
- 3001 - 4000
- 4001 - 5000
- 5001 - 18859



Legend

Waste Management Region



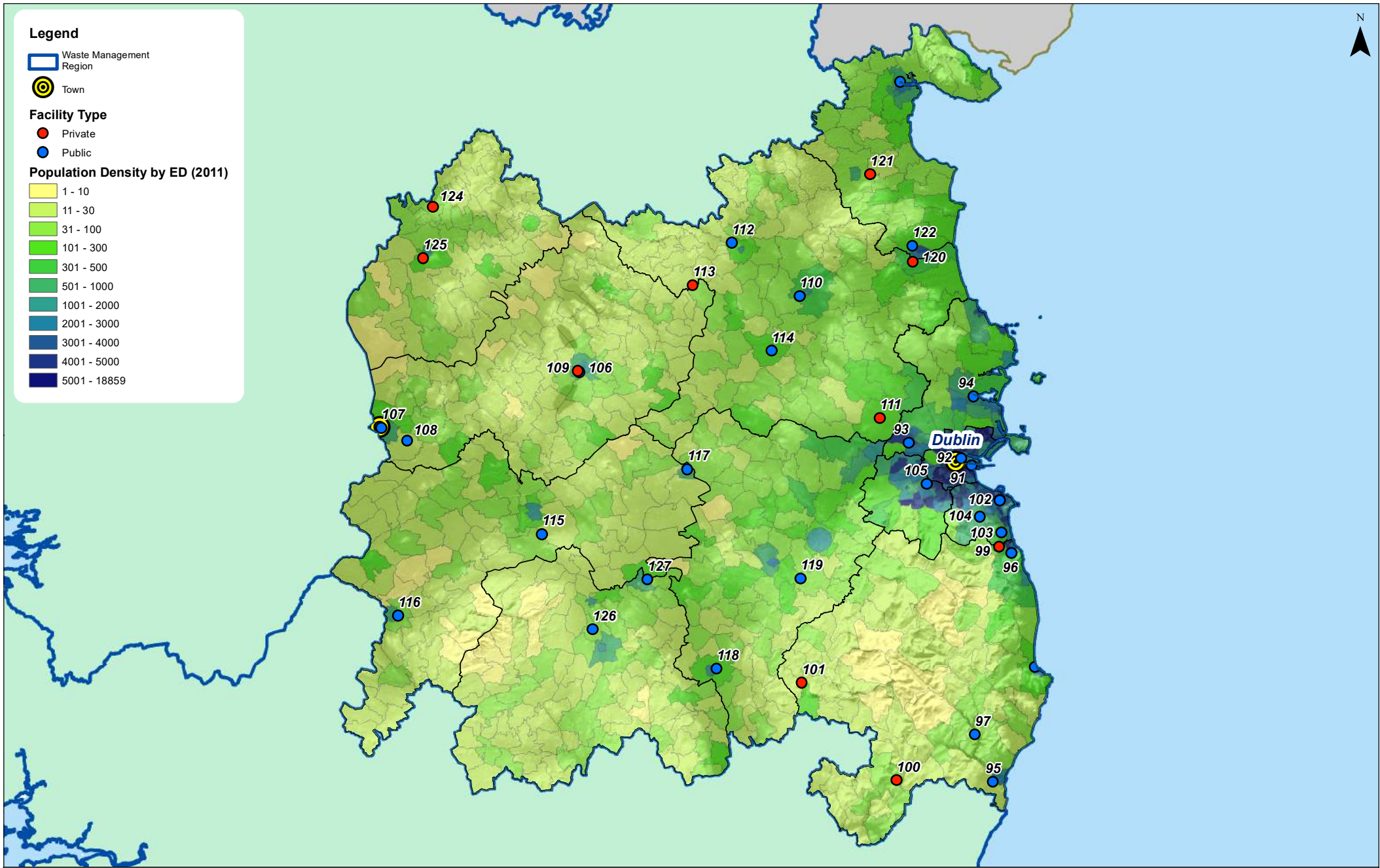
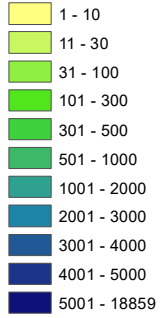
Town

Facility Type

Private

Public

Population Density by ED (2011)



Legend

Waste Management Region



Town

Facility Type

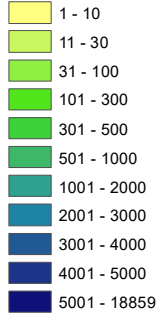


Private



Public

Population Density by ED (2011)



APPENDIX D

Local Household Waste Collection Markets – Case Studies



Midlands Region Household Waste Market: The effects of long-term privatisation in the market.

Prepared by Warren Phelan (RPS)

Date: July 2007

Background

The Midlands Region includes the counties of Offaly, Laois, Longford, North Tipperary and Westmeath and its household waste collection is serviced predominantly by the private waste sector. The first Waste Management Plan for the Region prepared in 1999 and noted at the time that private collectors predominantly managed the household waste collection service. The household waste collection service was fractured, with 18 private collectors operating alongside Westmeath County Council and two Local Urban District Councils. The Plan also reported that coverage of the collection service was considered to be high in most areas although the problem of uncollected waste was not documented.

The second generation Regional Waste Management Plan for the Region was made in February 2006 and reported that by the end of 2003 there were 7 private collectors and only one local Authority, Westmeath County Council, left in waste collection. Further consolidation has taken place in the market with one of the main waste collectors in the region, AES, recently purchased by Bord Na Mona.

Public Collection Services

Westmeath County Council is the only public waste collector continuing to operate in the Region and have contracted a private waste collector to collect waste on their behalf. The collector was appointed in 2004 to serve the traditional customer base, household and commercial, of the local authority. The current contract runs for 5 years and serves approximately 14,000 customers. All customers avail of a blue bin collection for recyclables in addition to the residual waste collection. A pilot brown bin scheme was introduced in 2006 and this scheme is still being assessed. Full details of the arrangement of the contract between Westmeath County Council and the private waste collector are provided in a separate case study.

Collection Coverage

The coverage of the household waste service in the Region remains very varied with high coverage in the urban centres and a poor level of service in rural areas. The Plan reported that by the end of 2003 the percentage of uncollected waste was approximately 37% of the total waste generated. This situation has changed little in the preceding years with the private waste collectors concentrating their activities in urban centres and their environs. Existing collection routes are expanded in urban areas to take account of new developments, residential and commercial, but rural communities continue, for the most part, continue without collection services. The main reason is economic and the costs associated with introducing and maintaining waste collection services into the rural areas of the Region.

Uncollected Waste

The uncollected fraction of household waste remains very high in the Region and the Local Authorities are attempting to tackle this problem. Uncollected waste is either brought directly by householders to a landfill or recycling facility or is disposed of illegally or through backyard burning or unauthorised burying. It was estimated that the illegal dumping or backyard burning of waste accounted for approximately 9-10% of the total household waste arisings in 2003. This figure is considered to have decreased slightly at this stage mainly due to the increased awareness and enforcement carried out by the local authorities in the Region.

The Local Authorities in the Region are attempting to tackle the problem of uncollected household waste by carrying out surveys of housing estates and identifying householders without a collection service. Those identified in this manner and who cannot provide evidence of alternative arrangements i.e. receipts from landfills and recycling centres, are required to avail of one of the private waste

collection services. These surveying and enforcement operations are costly and time consuming and are funded solely by the Local Authorities, with no contribution, financial or otherwise, provided by the private waste collectors in the Region.

Illegal Dumping

The issue of illegal dumping still remains in the Region albeit to a lesser extent since 2003 due to targeted public awareness campaigns and active enforcements operations. Nevertheless illegal dumping still occurs, particularly at bottle banks, and when it does the Local Authorities take responsibility for the clean up operations and can often include hazardous waste streams. During clean ups the local authority staff will use investigative techniques to try and identify the source of the illegally dumped waste. Clean ups are a costly expense for local authorities who fund and resource the necessary activities from their internal budgets.

Recycling Rates in the Region

In 2003 the level of household recycling in the Region was low at 10% with only 30% of householders provided with a dry recyclable collection. This situation has improved with approximately 65% of householders in the region reported²⁴ to have a dry recyclable collection and recycling rates have increased. Although recycling rates are increasing the high level of uncollected waste particularly from rural communities in the Region will make the regional recycling target of 45% by 2013 difficult to achieve.

The Region has adopted a policy of maximum source separation and plan to rollout a brown bin collection service for the collection of food and garden waste from householders. The rollout of a brown bin for householders in the Region has been slow with only one pilot scheme serving approximately 1,000 householders in Mullingar is currently in place. This scheme is being managed by Westmeath County Council who are contracting a private waste collector to carry out the pilot programme. No private collector operating in the Region has rolled out a brown bin collection service and biological treatment capacity as outlined in the current Regional Waste Plan²⁵ remains to be developed.

Waste Charges

The private waste collectors in the household market in the Region operate pay-by-use systems and there is little difference between the systems on offer. Set priced tags and tickets are the most common type of pay-by-use system in the Region with customers paying for tags in advance of collections. On waste collection days householders are required to display the relevant tag on their bin. Average annual household waste collection charges in the Region are high and there appears to be little competition in the market with similar charges applied by waste collectors. The high household waste charges in the region are a contributing factor to the high levels of uncollected waste in the region and illegal waste activities.

Conclusion

To conclude, the household waste collection market in the Midlands Region has been predominantly managed by the private sector since the late 90s. The private sector remains the main player in the household market with only Westmeath County Council still involved in the collection of household waste.

Collection coverage in the region is varied with uncollected household waste at a high level, estimated to be approximately 35% of the total household waste market. Rural communities for the most part fend for themselves with little or no collection in these areas. No waiver schemes exist for

²⁴ Midlands Waste Plan Annual Report, April 2007

²⁵ Waste Management Plan for the Midlands Region 2005 – 2010, Made on 5th February 2006.

householders in the Region except for householders in Westmeath, as the local authority are still involved in waste collection.

Illegal waste activities such as unauthorised dumping and backyard burning remain in the Region although through active enforcement and awareness by the local authorities are making progress. Recycling rates for household waste are increasing but remain low and achieving the regional recycling target of 45% by 2013 will be difficult.

There is little competition in the household market in the region with waste charges in parts of the region amongst the highest in the country at €420.

Case Study: The Publicly Managed 3-Bin Household Waste Collection System in Westmeath

Prepared by Warren Phelan (RPS)

Date: July 2007

Background

Westmeath County Council are the only public authority involved in the collection of household waste in the Midlands Region. Up to 2004 the local authority provided a door-to-door collection of black bin/bag type wastes to householders across the county. The collection service was managed and operated by the local authority and by 2004 was serving approximately 14,000 householders in the county.

In 2004 due to on-going operational and resourcing issues, Westmeath County Council decided to contract out the household waste collection service. A private waste collector was appointed to serve the existing local authority customers for a period of 5 years. The contract includes the collection of black bin waste and the rollout and collection of a dry recyclables (blue bin) collection for households. Performance targets are not included in the existing contract.

Public Management of the Household Waste Collection Service

Since the commencement of the contracted collection in 2004, the service has expanded and currently serves approximately 15,000 households. All customers have two bins, a black bin for the collection of residual waste and a blue for dry recyclable materials. The bins are collected every alternative week on a fortnightly basis and any bin presented for collection must have the appropriate bin tag. Tags are sold in urban and rural retail outlets across the county at a cost of € 8 per tag for the grey bin and € 4 per tag for the blue bin. The publicly managed collection is the largest household collection service in the county and table 1 details the quantity of waste materials collected in 2006.

Table 1: Waste Quantities Collected in 2006

Bin Type	Quantity of Materials Collected (Tonnes)
Grey Bin	10,500
Blue Bin	1,428

Householders who want to avail of the public collection service are requested to fill in a simple application form and submit this to Westmeath County Council. This is assessed by the local authority and if the household is on an existing route the details are passed to the contracted collector and included in the next collection. If a householder is not on an existing route and cannot be accommodated into the existing routes programme, the local authority will encourage the applicant and their public representative to sign up other householders in the community. This process gives rural communities in the county the opportunity to avail of a door-to-door collection service.

Apart from the details provided by the applicant the local authority do not request any further information from the householder or do not require the householder to open a waste charges account. Once an application is accepted the householder is advised of their collection day and provided with a collection calendar. To avail of the collection service the householder is required to purchase and display a tag on their bin on collection day.

The local authority funds the collection service through the sale of bin tags and in turn pays the contracted collector an agreed rate for every tag collected and presented to the local authority²⁶. Tags are sold from local authority offices in bulk amounts to retailers at a discounted rate. The retailer sells the tags to customers at the fixed price. From a local authority point of view, the current tag-a-bin system is effective and reduces the typical administrative functions required to manage household waste charges accounts.

Improving Household Recycling Rates

In 2003 the household recycling rate, for collected and uncollected waste, in Westmeath was reported²⁷ to be 7%, which at the time was the lowest rate in the Midlands Region. The dry recyclables collection had yet to be rolled out and bring banks and recycling centres providing the only outlets for household recycling. By the end of 2006, the household collection service has been expanded and all public customers have a separate bin for recyclables. It is estimated that 24% of the total waste collected from householders through the service contract is recycled.

The local authorities are continuing to develop the household waste collection service and in October 2006 introduced a brown bin collection on a pilot basis to almost 1,000 existing households. The brown bin is collected on a fortnightly basis and a € 4 tag is required to be displayed on each bin on collection day. The material collected is brought to a local composting facility in Mullingar for processing.

Overall presentation rates have been quite disappointing and from feedback received by the local authority, the main reason appears to be the relatively high charge for the brown bin tag. Contamination has not really been an issue and the local authority actively checks bins prior to collection and rejects unsuitable loads. The pilot scheme was planned to last for 12 months and will probably continue beyond this programme. The expansion of the collection scheme further will need to be assessed further in terms of the existing contract conditions.

Implementing Waste Policy Objectives

The current Regional Waste Plan contains a policy objectives and targets for the rollout of dry recyclable and brown bin collections for householders in all counties in the Region. The separate dry recyclable collection service introduced by Westmeath County Council in 2004 was followed by local private waste collectors²⁸, who rolled out similar systems. The pilot scheme in Westmeath remains the only brown bin collection programme operating in the region.

The current contract will be reviewed in 2009 and a revised contract will be put out to a competitive tendering process. The revised contract will address administrative issues which remain and will aim to pass more of the on-going maintenance and management issues to the service provider. This will include responding to customer complaints, dealing with general queries as well as awareness tasks. The revised contract will also look at setting performance targets in relation to expanding the brown and blue bin systems and continue to implement the current relevant waste objectives.

²⁶ For the existing contract, the private collector submitted in their tender a price per tag based on an assumed number of waste collections per week as set down in the contract documents. The number of collections was overestimated in the tender documents and as a result the collector made a compensation claim. In accordance with the contract conditions an independent arbitrator was appointed and the contracted collector was awarded a fixed weekly amount for the duration of the contract. The award was accepted by Westmeath County Council.

²⁷ Waste Management Plan for the Midlands Region 2005 – 2010, made on 5th February 2006 by Order of the County Managers in the Midlands Region (Offaly, Laois, Longford, Westmeath, and North Tipperary).

²⁸ Wallace Recycling is the largest private waste collector serving the household market in Westmeath and operate a similar priced tag a bin system to the local authority.

Conclusion

To conclude the introduction of a publicly managed contract for the collection of household waste has improved waste management for householders in the county. All customers of this service have a separate bin for the collection of dry recyclables and an increase in recycling rates has resulted. The contract has also facilitated the introduction of a pilot brown bin collection service, the only scheme of its kind in the Region.

The existing contract is limited and the local authority is still spending considerable resources managing general queries and complaints regarding the collection. The local authority will look to streamline these inefficiencies during the preparation of a future contract in 2009.

The local authority also facilitates the expansion of household collection services into rural communities albeit on a case by case basis whilst maintaining current collection efficiencies.

Case Study: The Impact of a Private Waste Collector on the Galway City Household Waste Market

Prepared by Warren Phelan (RPS)

July 2007

Background

Galway City Council were the first Local Authority in Ireland to rollout the 3-bin waste collection system at the household level. The rollout of the scheme commenced in 2004 on a phased basis and by the end of 2004 was available to approximately 21,000 householders. The implementation of the 3-bin collection service is a key waste objective for the management of household waste and in delivering the Region's adopted recycling target of 48%. By the end of 2004, the widespread rollout of the 3-bin system in the city ensured that this target was exceeded and a recycling rate of 57%²⁹ was recorded. This figure remains the highest level of recycling achieved by householders in a Local Authority area in Ireland to date.

In 2005 a private waste collector entered the household waste market offering competitively priced a bin and bag service to householders in the Galway City area. At this stage the private collector was not offering the same level of service, in terms of source separation to customers as the local authority and was able to offer customers considerable financial savings. Galway City Council responded by requesting Mayo County Council, the lead authority of the Connacht Region, to revoke the private collector's waste collection permit on the grounds that they were offering an inferior waste collection service and in doing so were contravening the regional waste policy objectives for the collection of household waste. The private waste collector eventually put in place a 3-bin system for their customers in 2006 at a significantly lower rate than the equivalent local authority system.

Cherry-picking of Customers?

In developing their household customer base, the private waste collector took a strategic approach targeting key areas in the city and environs. A general advertising campaign announced the arrival of the alternative household collection service and this was followed up with door-to-door calls in specific parts of the city by staff. The areas targeted were generally middle class areas and attractive incentives were also offered to existing customers to encourage neighbours to join up to the new collection service. As a result of its campaign the private collector has customers throughout the city but has a more intense presence in certain targeted and cherry-picked areas. The private collector also regularly targets new residential developments of single dwelling households and apartment complexes.

The number of customers who have transferred to the private collector service has grown steadily since 2005 and by the end of 2007, it is predicted that this figure will reach 8,000³⁰ householders although it could be higher. Assessing their current customer base Galway City Council consider that a significant amount of the good recycling households in the city have transferred to the private collection service taking advantage of the cheaper service. The local authority has retained a mix of households including the majority of the student population, pensioners and households eligible for waiver schemes. This change to the local authority customer profile is a contributing factor to the decrease in the City's household recycling rates which dropped to 56% in 2005 and to 55% in 2006. This decline is also due to contamination issues, particularly of the brown bin. In the long-term the

²⁹ The recycling figure of 57% represents the total fraction of waste collected separately for recycling from householders. It is accepted that when processing this material residual contaminants will be generated and may have to be disposed of to landfill. Data quantifying the extent of residual contaminants generated from processing recycling materials was not available although it is estimated to be relatively minor.

³⁰ This figure is a reasonably accurate estimate based on the number of households in the city area and the current customer base served by Galway City Council which is approximately 15,000 householders.

local authority recycling rates are expected to continue to decline as the Local authority struggles to retain its customer base in an increasingly competitive market.

Enforcement and Awareness

Considerable resources are spent actively enforcing the quality of material disposed of in the brown and green bins. Any bin visually identified as contaminated is left uncollected and generally disposed of to landfill. The local authority will then write out to the household informing them why their bin was not collected and informing them of the types of materials which can be disposed in the different bins. This awareness and educational process is on-going and aims to deliver clean materials for further processing. On the other hand, the private collector undertakes the minimum of awareness and enforcement of the quality of waste materials collected.

Waste Charging Systems

The private waste collector offers its customers the option of either a fixed annual charge of €229 per annum for the collection of its 3-bins or a more accurate pay-by-weight system similar to that offered by Galway City Council. Galway City Council applies a standing charge to each householder additional charges to each kilogram of grey, green and brown bin waste collected. A comparison between the private waste collector and local authority pay-by-weight waste charges is presented in Table 1:

Table 1: Pay-By-Weight Waste Charges

Waste Charges	Private Waste Collector	Galway City Council
Annual Standing Charge	€149	€159
Grey Bin Charge (per kg)	€0.155	€0.16
Green Bin Fee (per kg)	Free	€0.08
Brown Bin Fee (per kg)	Free	€0.05

This simpler fixed charge system offered by the private waste collector is attractive to customers who then know what they are paying for their collection service. Galway City Council estimate that on average their customers are paying between €270 and €280 per annum. This is one of the lowest full cost recovery pay-by-weight systems offered to householders in Ireland.

Customers who sign up to the private household waste collection service can only pay for their waste charges by credit card, laser card or direct debit and alternative payment methods e.g. cash or cheque are not accepted. This practice tends to exclude some households in the city such as student populations, and old age pensioners. In addition waiver schemes are not offered to low income households.

Biological Treatment & Other Waste Infrastructure

The source separated organic wastes collected by Galway City Council and the private waste collector is currently being brought to the Carrowbrowne Biological Treatment Facility. This facility is owned and operated by the local authority and is managed at cost. To ensure contamination is kept to a minimum Galway City Council request the private collector to pre check loads prior to arriving at the facility. Problematic loads are rejected and returned for disposal elsewhere. Contamination issues are an on-going problem for both customers of the local authority and the private waste collector and specific awareness and educational campaigns are required to tackle the problem. As outlined previously, the level of awareness/education carried out by the private collector is minimal in comparison to the system and procedures employed by Galway City Council.

Galway City Council also maintains 13 bring banks in the City where householders can dispose of glass and textiles and other items. Galway City Council also operates a waste transfer station for the handling of green bin waste materials which are transferred from the depot to a private sorting facility operated by Thorntons. The private waste collectors also operate a waste transfer station from where grey bin material is transferred to Kilconnell Landfill and green bin materials to a private facility in Tuam.

Conclusion

To conclude the arrival of a private waste collector into the household waste market offering an alternative and cheaper 3-bin service has significantly affected Galway City Council's waste collection operations. As a consequence the local authority has lost a considerable amount of customers since 2004 and recycling rates have begun to decrease, dropping from 57% in 2004 to 55% in 2006.

When commencing operations, the private waste collector targeted and cherry picked particular parts of the Galway City area, predominantly middle class areas, and developed their customer base there. As a result the local authority has lost a significant number of good recycling households while retaining the majority of student households, pensioners and waiver scheme households. The private collector does not offer waiver scheme and waste charges can only be paid by credit/debit card or direct debit, a practice which excludes certain households.

Galway City Council has reduced their own charges in an effort to remain competitive but they are finding it difficult to compete with the attractive flat rate charge provided by the private collector. The local authority maintain 13 bring banks in the City for householders to use and employ enforcement and awareness staff who tackle contamination issues, particularly of the brown bin, on an on-going basis. The private waste collector by comparison does not provide bring banks for householders and awareness campaigns are run on an annual basis only.

Case Study: The Household Waste Collection Market in Waterford

Prepared By Warren Phelan (RPS)

Date: August 2007

Background

Waterford County Council are part of the South East Waste Management Region and provide waste collection services to households across the County. A 2-bin collection system was introduced in 2001 and by the end of 2003 the local authority were servicing 83%³¹ of the householders in the county area. The total number of households without a collection service stood at 7% with the remaining households served by the private sector.

In September 2004, the Council commenced the rollout of the brown bin for the collection of organic materials from householders. The provision of this service implemented the local authority's objective to provide a 3-bin waste collection service to householders in their functional area. As the public collection service developed recycling rates in the county increased from 23.4%³² in 2004 to 46.1%³³ by the end of 2006.

The local authority service urban and rural areas across the county and have invested in collection vehicles according to their needs. A smaller one-man waste collection truck was purchased by the local authority and is used to serve isolated households and ensures that the same level of service can be delivered to householders across the region.

By the end 2005, Waterford County Council's 3-bin collection service was servicing over 15,000 householders. Of this customer base 11,500 – 12,000 householders were regular participants presenting waste for collection frequently. The remaining customers serviced by the local authority were considered to be occasional participants who presented waste on an irregular basis and included transient households such as holiday homes/villages, caravan parks etc.

Waste Charging

Waterford County Council implements the polluter pays principle and operates a tag-a-bin waste charging mechanism. Any bin/bag presented for collection is required to have a pre-paid waste label/tag. The cost for the waste tags is dependent on the type of waste collected and the charges applied are summarised as follows:

- Black Bin or residual waste: € 14 per tag for 240 litre bin.
- Green Bag for dry recyclables: € 2.50 for bag.
- Brown bin for organics: € 7 per tag for 140 litre bin.

In January 2006 the local authority introduced an additional waste charge to all customers supplementing the existing charging structure for waste tags. The closure of the local authority operated landfill and the need to implement the polluter pays principle in full were key drivers in the Council's decision to introduce the new charge of €150 to all householders. This charge was introduced to recover the full cost of providing all waste services to householders and accounts for all public sector spending on waste activities including waste collections, education and awareness

³¹ By the end of 2003, Waterford County Council were servicing approximately 70% of householders in the County with an additional 13% served by Dungarvan Town Council. Private collectors were servicing approximately 10% of the total households with 7% of households not availing of a collection service.

³² Service Indicators in Local Authorities 2004, Local Authority Management Services Board, June 2005

³³ Service Indicators in Local Authorities 2006, Local Authority Management Services Board, June 2007

campaigns, enforcement and the operation of recycling centres and bring banks. The introduction of the annual charge was very unwelcome by householders across the county particularly occasional users of the service and has impacted on the local authority collection rates and revenues.

At the same time Waterford County Council also introduced a household waste collection waiver scheme for low income households in their functional area. A waiver scheme had never existed in the County area and presently there are over 500 households currently availing of the scheme.

Recent Developments in the Household Waste Market

In February 2005, a private waste collector based in Limerick entered the market offering an alternative 2-bin collection system to the local authority service. Customers are charged on a flat or set charge basis every month for a weekly black and green bin collection. A third bin or brown bin was not offered. The private collector's preference is for a 2-bin collection service treating the black bin waste, including organics, at his MBT facility in County Limerick. This approach contradicts the adopted waste collection policy for the region which prohibits the use of flat-rate charging and from 2007 requires a mandatory 3-bin collection service to be offered to householders.

The private waste collector's strategy to date has been to service the Dungarvan, Lismore, Cappoquin and Rinn areas from his Clonmel depot and he has targeted and cherry picked customers along these routes. The simpler charging system i.e. the flat charge system has attracted previous Local Authority customers. Based on information collected to date it is estimated that the private collector is servicing over 600 households in the County area.

Kilkenny County Council as the permitting authority for the Region issued a Section 55 notice to the private waste collector, notifying the collector that his permit was under review. The private waste collector was requested to submit information of his collection service offered to householders in Waterford.

A revised permit with new conditions for collecting waste was issued to the private waste collector in April 2007. The permit conditions include the requirement for the collector to "agree" a separate organics or brown bin collection service with existing and new customers. The private waste collector has appealed this condition in the new permit to the District Court on the grounds that it will "affect his competitiveness" in providing a collection service in Waterford. The case is to be heard in October 2007.

A private waste collector from the Cork area has also begun collecting in Waterford and is offering competitively priced services to householders. The collection permit issued requires the collector to provide householders with a brown bin collection "where requested". There is an additional charge to householders who wish to avail of the brown bin collection so many do not take up the service. At this stage it is considered that the collector is servicing about 100 households in the County.

Financial Impacts from Recent Developments

The impact from the move to a full cost recovery waste collection service and the arrival of a number of alternative private waste collectors has impacted on Waterford County Council's collection coverage. It is estimated that the Council is now serving approximately 9,000 customers on a regular basis which is a significant drop in numbers since 2005.

The drop in the number of customers has impacted on the revenue and budget of the Council's environmental department. By the end of 2006 a shortfall in revenue of the order of € 0.5 million euros was estimated. This loss in revenue has significantly impacting on the local authority planned waste related expenditure for 2007, particularly waste awareness and educational activities with certain annual programmes and events stopped as a result. These include:

- Educational visits to schools by local authority awareness staff

- Waste Awareness workshops and campaigns
- Environmental competitions such as the Tidy Towns and Green Schools
- Environmental clean ups of public areas such as beaches and forests etc and

In addition since the end of 2005, the local authority has been unable to employ a full-time Environmental Awareness Officers (EAO) solely dedicated to raising waste awareness and educating householders, community groups and schools on best environmental/waste practice. This role is currently filled by a local authority officer with split responsibilities between awareness and management of the waste collection service. The continued decline in revenue from the collection service means that this situation is unlikely to change soon.

Environmental Impacts from Recent Developments

The decline in the local authority collection coverage from 2006 has been mirrored by an increase in the level of uncollected waste in the county. More and more householders are now looking after their own waste and bringing recyclable and residual waste to recycling centres. The participation rates for the brown bin collection service are mixed and are low in rural areas. Householders are reluctant to leave out the bin when it is only half full and the resulting quality of the organic material put out for collection is affected.

A significant quantity of householders in the west of the county are transporting waste across the border and disposing off it to Youghal Recycling Centre and Landfill in East Cork. This trend is making it increasingly difficult for the local authority to manage and report on wastes arising from the County and recorded tonnages for collected waste and recycling figures are decreasing. In response Waterford County Council have started accepting mixed residual waste as well as recyclable materials at their recycling centres.

Backyard burning and illegal dumping are also on the rise according to Waterford County Council although the estimated percentage of household waste being disposed in this manner is unknown. Environmental enforcement is increasing and the number of enforcement procedures³⁴ taken against polluters increased from 124 in 2005 to 230 in 2006.

Conclusion

Waterford County Council is a leading waste collector in Ireland who has been delivering a 3-bin service to householders since September 2004. Recycling rates in the county are among the highest in the country at in 2006 were reported to be at 46.1%.

The future viability of the Waterford County Council waste collection service is uncertain. The move to a full cost recovery collection service and the arrival of private waste collectors to the market has impacted on collection coverage rates. The levels of uncollected waste have increased along with illegal waste activities and the local authority is having increasing problems reporting of waste data.

The number of households serviced by the local authority has decreased and the income from waste collection has dropped significantly. A shortfall in the Council's waste revenue (estimated to be the order of €0.5 million of the planned expenditure for 2007) has impacted on waste related activities including the provision of waste awareness staff and educational activities and events. Specific annual campaigns and programmes have ceased due to a lack of funds.

The ownership of the household waste remains an on-going problem and the local authority through the Waste Collection Permits has conditioned private waste collectors to provide the same level of service to households including a brown bin collection service. There has been difficulty in implementing this condition and a legal case with one private collector is on-going.

³⁴ The environmental enforcement procedures include litter, waste, noise, air and water.

APPENDIX E
International Case Studies

Tallinn Waste Collection Market (Estonia)

In recent years, Tallinn has significantly improved the **kerbside collection of household waste**. . Previously the city used procurement to find a company who was given the exclusive right to collect and transport waste in a given area. It was up to the appointed company to decide where the waste is processed. In 2013 the city founded the Tallinn Waste Centre and changed the procurement principle. Now the Tallinn Waste Centre finds a waste collector with one procurement and a waste processor with another.

The Waste Centre itself enters into contracts with waste holders, submits invoices and pays the waste collectors and processors. A fee charged from waste holders depends on the size of the container used: the larger the container, the higher the fee. Compared to transport of unsorted waste, the sorted waste is transported at a smaller fee or without a fee. Tallinn is the only Estonian city who has introduced such system.

The new efficient system has enabled the Waste Centre to offer a waste collection service for a more consistent price and quality. This has led to significant improvements in waste segregation and allows the city to cross-subsidise the waste collection price for different waste types. The advantages of the centrally managed system are:

- It allows to provide a single waste collection service throughout the city, which means no more big differences in prices or the quality of customer service across regions.
 - Allows to cross-subsidise the price of the waste collection service by different types of waste, e.g. establish higher fees for mixed waste bins and lower fees for sorted waste or charge no fee for recyclable waste.
 - Supervision (enforcement) is easier as the city has current and immediate information about waste collection.
 - the city can now provide several additional services (e.g. flexible transport of bulky waste, incl. leaves and Christmas trees, bin washing, etc.), which have directly helped to improve the waste management service and thereby boosted the residents' willingness to sort their waste.
-

Altering the Household Waste Collection Market in Poland (City Example Wrocław)

Up to mid-2013 the municipal waste management system was based on free-market principles, i.e. every property owner was free to contract a chosen waste collector for waste management services. From July 1, 2013, the municipal waste management system has been taken over by the Municipality of Wrocław. The local authority took control over the municipal waste stream and a new separate collection system was introduced.

This new centralised approach covered all property owners and a consistent system was introduced and potential leakages minimised.

Collection and management of waste is handled by companies, selected by a competitive tendering process.



Figure 1-4 Historic and Present Collection Models in Wrocław

The separate collection and treatment/disposal requirements for individual waste fractions are defined in City Regulations. Over the last four years, the source separate collection system has been extended and now covers 14 waste fractions. Moreover, the frequency of collection has increased.

Tallinn Waste Collection Market (Estonia) (Narrative and Views are those of the City of Tallinn)

In recent years, Tallinn has significantly improved the **kerbside collection of household waste**. Previously the city used procurement to find a company who was given the exclusive right to collect and transport waste in a given area. It was up to the appointed company to decide where the waste is processed. In 2013 the city founded the Tallinn Waste Centre and changed the procurement principle. Now the Tallinn Waste Centre finds a waste collector with one procurement and a waste processor with another.

The Waste Centre itself enters into contracts with waste holders, submits invoices and pays the waste collectors and processors. A fee charged from waste holders depends on the size of the container used: the larger the container, the higher the fee. Compared to transport of unsorted waste, the sorted waste is transported at a smaller fee or without a fee. Tallinn is the only Estonian city who has introduced such system.

The new efficient system has enabled the Waste Centre to offer a waste collection service for a more consistent price and quality. This has led to significant improvements in waste segregation and allows the city to cross-subsidise the waste collection price for different waste types. The advantages of the centrally managed system are:

1. it allows to provide a single waste collection service throughout the city, which means no more big differences in prices or the quality of customer service across regions.
 2. allows to cross-subsidise the price of the waste collection service by different types of waste, e.g. establish higher fees for mixed waste bins and lower fees for sorted waste or charge no fee for recyclable waste.
 3. supervision (enforcement) is easier as the city has current and immediate information about waste collection.
 4. the city can now provide several additional services (e.g. flexible transport of bulky waste, incl. leaves and Christmas trees, bin washing, etc.), which have directly helped to improve the waste management service and thereby boosted the residents' willingness to sort their waste.
-

Wroclaw (Poland)

By mid-2013, the municipal waste management system was based on the free-market principles, i.e. every property owner was supposed to contract an arbitrarily chosen waste collector for waste management services. Containers for mixed waste were located directly at each property.

Separate waste collection in the city began in 1994, when 19 containers for the co-collected waste glass, plastics, paper and metal were distributed. In the years 1997-1998, the Municipality of Wrocław distributed 200. Also, external companies have undertaken separate collection of these waste fractions. In 2005 there were 459 sets of containers in Wrocław (8D10). In 1996 the collection of aluminium cans began. Waste batteries were collected at educational facilities. Since 2007, pharmacies have set up containers for expired medicines. Since 2006, an action "Clean housing estates" has been carried out, within the framework of which bulky waste is collected in dedicated containers.



Fig.8.7. Municipal waste management models in Wrocław - historical and present ones

As of July 1, 2013, the municipal waste management system has been taken over by the Municipality of Wrocław and the new principles of separate collection have been introduced.

The scope of separate collection and treatment/disposal of individual waste fractions (8D6) are defined in the Regulations on the maintenance of cleanliness and order in Wrocław. Over the last four years, the scope of selective collection has been extended and now covers 14 waste fractions. Moreover, the frequency of collection has increased.

Ekosystem, acting on behalf of the Municipality of Wrocław, publishes online practical waste-related information for the residents, including: Eco-manual (8D27), description of the rules of waste segregation

(8D28), information about the functioning of civic amenity sites (8D29), data of waste collecting companies (8D32), waste collection schedules (8D33) and information on waste management fees (8D34).

Thanks to those activities and education, the amount of waste collected separately has gradually increased.

After taking over the municipal waste management system, the Municipality of Wrocław gained actual control over the municipal waste stream. Covering all property owners by the same system allowed to minimize potential leakages. Collection and management of waste is handled by companies, chosen in a tender procedure.
