

POLICY PAPER

Household Waste Policy in Ireland: Options for Competition, Environment and Regulation

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Abstract: A review of household waste (HHW) policy has been announced. Competition in HHW collection is evolving towards a series of local monopolies which, combined with high barriers to entry, create the conditions for rents to be earned. So much for market failure, what is the solution? This paper presents arguments in favour of competitive tendering, including: HHW collection charges should be more attractive as rents are eliminated; CO₂ emissions and congestion costs would be reduced as there is no inefficient duplication; and complementary mechanisms can ensure that HHW collection charges do not get too high in low density areas, thereby protecting the positive externalities of broader take-up of HHW collection services.

I INTRODUCTION

The collection of household waste (HHW) in Ireland is a private sector activity. Individual households contract with private operators for the provision of the service. Subject to fulfilling certain environmental and economic regulatory

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requirements, any private operator can enter HHW collection and by offering better terms and conditions – competing on the merits – persuade households to switch their HHW provider from an existing operator (i.e. side-by-side competition or competition *in* the market).

On 27 June 2017 statutory measures requiring a form of pay by weight pricing were announced to provide incentives for households to generate less HHW and segregate more of it for recycling. This pricing structure was intended to replace flat rate pricing used by most operators under which households had little or no incentive to reduce HHW. There were, however, two potential drawbacks with the new pay by weight pricing structure:

- It appears to have created limited incentives to reduce HHW, since charging by weight only comes into effect after a pre-defined allowance or threshold has been reached. The threshold has been set at a high level (CCPC, 2018, para. 3.34; CCMA, 2018, p. 18); and,
- It could lead to an increase in HHW bills. Indeed, the spectre of ‘price gouging’ was raised. Price gouging or excessive pricing might already have happened given the presence of local monopolies and oligopolies. (On excessive pricing in the context of competition policy, see Whish and Bailey, 2018, pp. 735-746).

A Price Monitoring Group was set up in July 2017 to report on HHW charges as the new pricing structure was introduced.¹ The Competition and Consumer Protection Commission (CCPC, 2018, Appendix A) was requested in September 2017 to conduct a market study on the HHW sector, to:

assess the nature and scale of consumer and operator issues in the household waste collection market and consider if the introduction of an enhanced regulatory regime could efficiently address these issues, in the short and long term.

The CCPC study recommended the establishment of a national economic regulator. The regulator would issue economic licenses for HHW operators, have the power to control prices, levy fines, and determine the appropriate market design for each separate geographic market it identified.

The CCPC study did not recommend a particular market design: side-by-side competition; price regulation; and/or competitive tendering (i.e. competition *for* the market).²

¹ For details see: <https://www.dccae.gov.ie/en-ie/environment/topics/waste/the-householder-and-waste/household-waste-collection/price-monitoring-group/Pages/Price-Monitoring-Group-.aspx>.

² In earlier research the Competition Authority (2005, paras. 3.9-3.14) considered the merits of competitive tendering and price regulation and rejected the latter option. That discussion need not be rehearsed here.

The Minister for Communications, Climate Action and Environment (the Minister), whose remit includes HHW, welcomed the publication of the CCPC's study on 28 September 2018 (DCCA&E, 2018). On 8 May 2019 the Minister announced a review of current waste management policy – set out in the Department of Communications, Climate Action and Environment's (DCCA&E) *A Resource Opportunity* (the 2012 Policy) – would be initiated.³ Account would be taken of the CCPC's study. The consultation document commencing the review was published on 30 December 2019.⁴

The purpose of this paper is to focus on what the Minister should do, given the evidence at hand, with respect to HHW collection. The CCPC study, summarised together with a brief commentary in Section II, is taken as the point of departure. However, its findings and recommendations are situated relative to earlier reports and studies. Although this paper's focus is on HHW collection market design, the provision of a universal HHW collection service, thereby protecting the positive externalities (e.g. reduced illegal dumping, lessening congestion and CO₂ emissions) of broader take-up of HHW collection services, is addressed in Section V.

The paper considers three aspects of market design: the characterisation of competition under the current side-by-side HHW market, as it evolves towards a series of unregulated local monopolies (Section II); the assessment of the risks of moving from the current HHW market design to competitive tendering (Section III); and whether *ex ante* regulation is justified if the HHW market design were competitive tendering (Section IV). The issue of universal HHW collection and cross-subsidy is addressed in Section V. The paper's preferred policy package is summarised in Section VI.

II THE CCPC's HHW STUDY

2.1 Introduction

The CCPC study is divided into five chapters, plus a series of appendices. Chapter 1 briefly outlines the motivation, the remit, the methodology and existing HHW policy. The CCPC conducted a public consultation (summarised in Appendix C), and, *inter alia*, commissioned an econometric report that examined the competitive pressure that the current structure exerts on HHW collectors (Appendix B), market research on the consumer experience with HHW collection (Appendix E), and a survey of ten national competition authorities on the operation of HHW collection in those jurisdictions (i.e. Estonia, France, Finland, Italy, Latvia, Lithuania, Poland, Slovakia, Sweden and the UK).

³ For details see https://www.oireachtas.ie/en/debates/question/2019-05-08/1207/#pq_1207.

⁴ Government of Ireland (2019). The consultation document requests views as to the merits of the CCPC recommendation for the creation of a national economic regulator for HHW (pp. 63-65) but makes no comment as to the merits or otherwise of this proposal.

2.2 Market Structure

In Chapter 2 evidence of economies of scale (i.e. average cost falls as volume increases) and density (i.e. the greater the density of households in a given geographic area the lower the cost of collection per household) are presented. The minimum efficient size for a HHW collector is estimated at 5,000 households. The CCPC (2018, para. 2.20) concludes that HHW collection at the local level “is a natural monopoly”. Local authority HHW markets are highly concentrated. There are high barriers to entry due to economies of scale and density. Incumbents can selectively price cut should a new operator enter the market. Furthermore operators in adjacent geographic markets are unlikely to enter each other’s market due to the fear of retaliation. A tacit no poaching understanding is reached, which can lead to rents being earned⁵ and, at the same time, be immune from the remit of competition law (Ezrachi and Stucke, 2016, pp. 56-60). New entry is thus unlikely, given the difficulty and uncertainty of getting households to switch providers. On the other hand, exit and consolidation is the norm: the number of HHW operators in Ireland declined from 82 to 63 between 2012 and 2016. This trend is expected to continue.

In discussing market structure the CCPC notes that internationally competitive tendering rather than side-by-side competition is the norm for HHW market design. It is also observed that side-by-side competition exacerbates the impact of barriers to entry compared to competitive tendering. The cost of entry is much lower when the market design is competitive tendering. All HHW collectors are placed on the same footing when making a bid for the market. An international waste operator informed the CCPC that it was deterred from entering the Irish HHW market due to the current side-by-side market design.

2.3 Regulatory and Enforcement Environment

The regulatory and enforcement environment is the subject of Chapter 3. The 2010 Programme for Government stated that the Government:

will introduce competitive tendering for local waste collection services whereby local authority and private sector collection firms would bid to provide waste collection services in an entire local authority area, for a given period and to a guaranteed level of service, including a public service obligation in respect of a waiver scheme for low income households (CCPC, 2018, p. 30).

Local authority HHW operators were in the process of exiting the market.

⁵ A rent is earned when a factor of production is paid in excess of the minimum payment required to have that factor supplied. If a no poaching agreement, albeit tacit, is reached, then HHW operators can charge a price in excess of the competitive level and thus earn a rent (i.e. excess profits).

A RIA was subsequently undertaken in 2012 by the DCCA&E.⁶ The RIA, for example, made a comparison of HHW waste charges between Cork – side-by-side competition – and Belfast – competitive tendering. It found that for Cork the annual per household charge was €312.45, for Belfast, €219.67: a cost saving of 30 per cent (DEC&LG, 2012a, p. 85). The RIA comparison makes a number of adjustments to ensure that like is being compared to like.⁷

The RIA, which is summarised in some detail in the CCPC study, compared three market design options: do nothing (i.e. side-by-side competition); restructure the market via competitive tendering; and retain current market structure, enhancing regulation (e.g. customer charter). Using eight criteria, including minimising price, market stability and competitive sustainable industry, the RIA scored these three options, respectively, as follows: 40; 81.5; and 76.⁸ The maximum score is 95.⁹ However, the RIA then introduced a “Problematic Implementation Scenario”, which changed the scoring: 40; 72; and 76, respectively. Hence the RIA recommended the third option, due to problems of moving from the current side-by-side model to the optimal market design of competitive tendering. This conclusion was subsequently endorsed in the 2012 Policy.

The CCPC also reviews in Chapter 3 its own involvement in the HHW sector. It notes that despite a number of allegations concerning anticompetitive behaviour that there was insufficient evidence to commence enforcement proceedings. Mergers in the HHW sector have, nevertheless, been subject to the CCPC’s remit. However, the CCPC argue that given the combination of natural monopoly and high barriers to entry there is little that *ex post* intervention can accomplish and that the alternative *ex ante* approach is more appropriate.

2.4 Consumer Perspective

In considering the consumer perspective in Chapter 4, the conclusion of the econometric report commissioned for the CCPC (2018, para 4.5) that found “monopolistic tendencies” are cited. Reference is again made by the CCPC (2018, para. 4.7) to the ongoing exit of HHW operators, increasing concentration “which

⁶ For details see DEC&LG (2012a). It should be noted that the DCCA&E has undergone a number of name changes but the current name is used to cover all earlier incarnations.

⁷ Such a finding is consistent with Merilainen and Tukianen (2019) which, using a different methodology, estimated the impact of switching from side-by-side competition to competitive tendering for HHW charges, based on the experience of Finnish municipalities. The authors concluded that such a switch “induces a statistically significant and large decrease [between 17 and 37 per cent] in unit prices” (p. 447).

⁸ “Restructuring the market via competitive tendering” scored more highly than “retain current market structure enhanced regulation” on five of the eight criteria; scored the same on two and lower on one (i.e. “Market stability, regulatory certainty”). It should be noted the results reported in the text refer to the “Weighted Score”. For details see CCPC (2018, pp. 29-31) and on the weighting, the next footnote.

⁹ The unweighted maximum score is 80 (i.e. a maximum of ten per each of the eight criteria). However, the RIA considered that three criteria were especially important (environmental objectives; price; and system stability) and instead of a weight of 1 they were given a weight of 1.5, resulting in a maximum of 95. For details see DEC&LG (2012a, pp. 95-96).

will allow monopoly providers to increase their charges”. A significant number of households have no access to a HHW collection service, which the CCPC suggests is due to low route density resulting in higher collection costs. However, the vast majority of these households transport their waste to collection points. Switching HHW operator was not an option for 18 per cent of households nationally and 25 per cent in the Dublin region. Switching rates for HHW operators were slightly lower than other utilities. Consumer complaints spike when policy changes occur such as the 2017 introduction of the pay by weight pricing mandate.

2.5 Conclusions and Recommendations of CCPC Study

The CCPC lists 11 characteristics of the HHW collection market in reaching its conclusions and making recommendations in Chapter 5. Many have been identified above, ranging from the fact that the HHW collection market is a natural monopoly to no service being available to many households. These characteristics signal a market that is not performing well for consumers. Furthermore matters are not expected to get better. The CCPC (2018, para. 5.14) sees the HHW “market ... moving towards a service provision of unregulated monopoly operators”. So much for the market failure; what about the solution?

The CCPC considers that the HHW side-by-side model in Ireland meets the criteria set out in the methodology employed to analyse certain telecommunications markets to determine whether or not they should be subject to *ex ante* regulation: high barriers to entry; a market which does not tend towards effective competition; and insufficiency of competition law alone to address the market failures. Having decided that *ex ante* regulation is the correct approach the CCPC (2018, para. 5.21) eliminates the option of competitive tendering as the preferred market design on the following grounds:

The study shows that internationally, the prevailing approach to private provision of household waste collection services is through competition for the market. However, decisions to date in Ireland have not chosen this route. Therefore, this study’s recommendations are made in the context of previous Government decisions and the range of prevailing market conditions, including markets with side-by-side competition, monopoly providers and areas of no service.

The CCPC then makes the specific recommendations concerning the creation of a national economic regulator with the remit set out in Section I. It is also important for the regulator to collect data and conduct analysis including at the level of individual HHW collection routes. In areas where there is a monopoly provider, the CCPC (2018, para. 5.25, iii) suggests that one option would be “targeted competitive tendering for certain areas”. In order to increase the availability of HHW collection a cross-subsidy is proposed:

Creating markets by combining less commercially viable areas with more commercially viable areas, thereby increasing the provision of household waste collection service. (CCPC, 2018, para. 5.25 iii)

2.6 Commentary

The CCPC's description and analysis of the HHW market is consistent with the results of the earlier analysis of the Competition Authority (2005), Ireland's development agencies (Forfás, 2007), the OECD's (2008) examination of public services in Ireland, the international review on waste policy commissioned by the DCCA&E (Eunomia *et al.*, 2009), and the RIA undertaken for the 2012 Policy (DEC&LG, 2012a). The CCPC study usefully updates and extends the earlier analysis by highlighting, for example, the continuing exit of collectors from the HHW sector as it undergoes further consolidation and evolution towards a series of unregulated local monopolies. A corollary of this characterisation of the evolution of the HHW collection market is that side-by-side competition will likely gradually become less prevalent.

Although there is consensus on characterising competition in the HHW market between the CCPC study and earlier reports and studies, there is a marked difference in the policy implications with respect to market design. All of the earlier analysis, with the partial exception of the RIA, favoured competitive tendering (Competition Authority; 2005, para. 3.21; Forfás, 2007, p. 16; OECD, 2008, pp. 335-6; and Eunomia *et al.*, 2009, pp. 58-9). In contrast, the CCPC specifically rejects competitive tendering as the preferred or optimal market design, instead leaving such questions to its proposed national economic regulator to be decided on a case-by-case basis. The RIA is a partial exception because while it considered competitive tendering was the optimal market design, it nevertheless favoured side-by-side competition due to implementation risks – moving from the status quo to competitive tendering. The 2012 Policy agreed.

The CCPC study defers to the 2012 Policy in rejecting competitive tendering as the preferred market design. It is, of course, important in making policy recommendations to take into account existing policy. However, it is not at all clear why the CCPC should regard the 2012 Policy as a binding constraint. It raises the obvious question: why request the independent agency to address issues in the HHW sector if it is going to unquestioningly accept current policy? There is nothing, for example, in the CCPC's (2018, Appendix A) broad terms of reference which would explain such a limitation.

III IMPLEMENTATION RISKS AND DEFINING CHOICES

3.1 Introduction

In deciding on the merits of differing policy options, comparisons are typically made with the status quo as the default position: side-by-side competition as

opposed to competitive tendering. In making these comparisons it is important that the implementation risks – moving from the status quo to competitive tendering – are considered. It may be, for example, as the RIA argued, that the transition costs of moving from side-by-side competition to competitive tendering implied by the implementation risks outweigh the benefits of the policy change. A more subtle issue in policy evaluation is the framing of alternatives to the status quo. How, for example, is the competitive tendering option defined relative to the status quo? These two issues are addressed in this section.

3.2 The Regulatory Impact Analysis: Implementation Risks

The DCCA&E's commissioned RIA into HHW concluded that competitive tendering “scores highest under optimal implementation conditions, however should implementation be problematic, side-by-side competition provides a superior mix of outcomes”. This would be a particular problem “during this difficult phase of the economy's development (DEC&LG, 2012a, p. 105)”. The RIA outlines the implementation risks and then assesses them.

The RIA raises two sets of such risks. The first set is confined to implications of tendering for smaller and medium sized enterprises (SMEs). Here the RIA argues that SMEs:

may be disadvantaged, relative to their larger counterparts, due to the difficulties they may have in assembling the managerial and corporate expertise required to effectively engage with a somewhat complex [competitive] tendering process (ibid, p. 100).

Furthermore, although the RIA acknowledges that the purpose of HHW regulation “is not to support employment amongst inefficient service providers (ibid, p. 101)”, it is nevertheless the case if the existing SMEs are unsuccessful in competitive tendering then “the simultaneous collapse of several household waste collection companies [will] result in a strong negative impact on the local economy (ibid, p. 102)”.

The second implementation risk was summarised as follows: “[T]he current industry may be unwilling to engage in an altered market structure and may take actions to obstruct change (ibid, p. 102)”. The RIA pointed out that the HHW sector was against the introduction of competitive tendering and that since local authorities had withdrawn from HHW, local authorities were not in a position to be providers of last resort. A number of possible tactics by HHW collectors to thwart the successful operation of competitive tendering were outlined including a boycott (i.e. a service provision strike). The RIA did, however, point out that such a collective boycott would require considerable trust amongst the HHW collectors, and “may, in practice, be unachievable, as the benefits to an individual firm of clandestinely breaking ranks could be massive (ibid, p. 102)”. Also, as the RIA

points out, if non-indigenous firms engaged in the bidding for tenders then it would be self-defeating for indigenous firms to boycott the tendering process.

3.3 Competitive Tendering: Implementation Risks?

3.3.1 Introduction

There are several cogent reasons for arguing that the weight accorded to implementation risks by the RIA and the 2012 Policy is unwarranted. First, the nature of the implementation risk is highly conditional. The RIA, as noted above, poses the issue in terms of “should implementation be problematic”, not that it will.

3.3.2 Lack of Evidence

Second, in evaluating the implementation risks the RIA presents no supporting data or evidence, in contrast to much of the rest of the RIA. For example, reference is made in the RIA to the impact on local unemployment of the simultaneous collapse of several HHW operators. However, no evidence is provided on: the likely simultaneous failure of multiple HHW operators in the same local area; the likely size of any employment loss; the re-employment rates of those unemployed; the local and national labour market unemployment rates; and the loss of employment in HHW compared to the total employment in the local employment area. Attention would also need to be paid to any offsetting increase in the demand for local goods and services, given that competitive tendering will likely lower HHW collection charges. Households can then spend the resulting increase in their real income on other local goods and services.

3.3.3 Improved Economic Circumstances

Third, the RIA and the 2012 Policy were developed against the backdrop of the Great Recession. Economic conditions were grim: the unemployment rate in July 2012, the month the RIA was published, was 15.6 per cent, while GNP remained unchanged between 2011 and 2012.¹⁰ Hence it is perhaps understandable that in framing policy there was a concern over economic conditions and, in particular, unemployment. However, when the CCPC was requested to conduct its study in September 2017 unemployment had fallen to 6.6 per cent, and a year later to 5.6 per cent, while the 2017/2018 GNP growth rate was 6 per cent. Furthermore, it is not entirely clear that this risk should be addressed through HHW policy. The demand for labour is best addressed through macroeconomic policy; the supply side through training and education policies designed to improve the employment prospects of workers. Trying to use one policy instrument to address several different objectives is often a recipe for failing to attain any of the objectives.

¹⁰ See: <https://www.cso.ie/multiquicktables/quickTables.aspx?id=mum01> for seasonally adjusted monthly unemployment rates. Annual GNP in constant markets prices was kindly supplied by Kieran McQuinn of the Economic and Social Research Institute.

3.3.4 SMEs Disadvantaged?

Fourth, the RIA argued that SMEs might be disadvantaged in bidding for tenders under a competitive tendering system.¹¹ However, if it can be demonstrated that this is the case and that having such firms participate in competitive tendering would substantially increase the degree of competition and thus lead to lower HHW collection charges, there is nothing to prevent measures being introduced to facilitate SME participation. In the awarding of the 3G telecom licenses in the UK, for example, great attention was paid in the auction design to ensure that new entry could spur competition in the bidding (Binmore and Klemperer, 2002).

3.3.5 Illegality of Collective Boycotts

Fifth, apart from the unlikelihood of incumbent HHW collectors successfully boycotting any competitive tender process for reasons set out in the RIA, there is another important factor for discounting this risk: collective action by incumbent HHW collectors is likely to be a *prima facie* breach of the Competition Act 2002. The CCPC, for example, in its earlier incarnation as the Competition Authority (2009, para. 4.20), in providing guidance to what trade associations may and may do under competition law, stated:

A collective boycott, organised between competing undertakings in order to place pressure on ... a buyer, is a form of output limitation, and thus, a restriction of competition by object. In its enforcement work, the [CCPC] has encountered many circumstances in which competitors are alleged to have colluded in a collective boycott. Where such allegations are proven, the [CCPC] takes the view that significant consumer harm is likely to result, and therefore, prevention and/or punishment of collective boycotts is a key enforcement priority of the [CCPC].

For a restriction by object case to be successful in Court only requires demonstrating that the boycott took place; there is thus no requirement to show that consumers are worse off as a result; it is presumed because of the inherently anti-competitive nature of the agreement (Andrews *et al.*, 2015, pp. 94-97; Whish and Bailey, 2018, pp. 119-126).

3.4 Framing the RIA Choices: An Incomplete Comparison?

The comparison presented in the RIA, which forms the basis of the 2012 Policy, is, it could be argued, incomplete. As noted above the RIA compares three options: status quo or side-by-side competition; competitive tendering; and status quo or side-by-side competition plus enhanced regulation. As we can see from Table 1 (Weighted), which reproduces the RIA scoring of the three options in bold, the

¹¹ Merilainen and Tukianen (2019) investigate this issue and conclude, however, that competitive tendering “does not seem to favour or penalise the largest firm to any noticeable extent” (p. 456).

addition of enhanced regulation to the current side-by-side competition model increases the score from 40 to 76. However, these enhanced regulatory measures – a legal obligation for households to demonstrate that they dispose of their waste in accordance with the law, and a pricing structure that creates incentives to reduce and segregate waste – could also be combined with competitive tendering. Hence it is proposed to add a new or fourth option: enhanced regulation/competitive tendering.

It is difficult to know exactly how to score enhanced regulation/competitive tendering, except that this alternative will almost certainly increase the score as compared to current regulation/competitive tendering. In Table 1 it is assumed that enhanced regulation raises the score of competitive tendering by as much as it does for side-by-side competition (i.e. $76 - 40 = 36$). Under both current and enhanced regulation, competitive tendering has a higher score than side-by-side competition.

Table 1: A Comparison of the Scoring of Alternative Market and Regulatory Structures for HHW Collection^a

Scenario	RIA Options			Proposed New Option	Maximum Score All Options
	Current Regulation		Enhanced Regulation	Enhanced Regulation	
	Side-by- side	Competitive Tendering	Side-by- side	Competitive Tendering	
Weighted	40	81.5	76	95 ^b	95
Problematic Implementation	40	72	76	85.5 ^c	95

Source: DEC&LG (2012a, Table 5.7, p. 96; Table 5.8, p. 97).

Notes: ^a Numbers in bold are taken from the RIA. The scoring is across eight different criteria. See Section II for more details.

^b Under enhanced regulation/competitive tendering it is assumed that the increase in the score for side-by-side competition between current regulation and enhanced regulation (i.e. 36) also applies to competitive tendering, yielding 117.5 (i.e. $81.5 + 36$). However, there is an upper limit of 95.

^c The decline in the score for current regulation/competitive tendering due to Problematic Implementation was 9.5. If this is applied to enhanced regulation/competitive tendering then the score is 85.5 (i.e. $95 - 9.5$).

In order to measure the impact of implementation risks on enhanced regulation/competitive tendering, it is assumed that the impact is the same as for current regulation/competitive tendering (i.e. $81.5 - 72 = 9.5$). The enhanced regulation/competitive tendering option, when account is taken of implementation risks, records the highest score – 85.5 – well above enhanced regulation/side-by-side competition score of 76.

3.5 Conclusion

In sum, the implementation risks identified in the RIA and endorsed by the 2012 Policy do not stand up to scrutiny. The RIA's initial finding that competitive tendering is the optimal market design in theory also applies in practice (i.e. taking into account the implementation risk). Furthermore this conclusion is strengthened if enhanced regulatory measures are included in the competitive tendering option.

IV IS EX ANTE REGULATION JUSTIFIED?

4.1 Introduction

As noted in Section 2.5, the CCPC justifies *ex ante* regulation, which involves the creation of a national economic regulator, by applying a set of three criteria – high barriers to entry, lack of effective competition, and insufficiency of competition law – to a HHW market characterised by side-by-side competition. These three criteria, formulated by the European Commission (2007, para. 14), are cumulative. The CCPC concludes that all three conditions were satisfied.

The analysis of Section III concluded that competitive tendering, not side-by-side competition, is the optimal market design for HHW collection. This raises the question of whether *ex ante* regulation is also appropriate for this market design. In this section the European Commission's three-fold test is applied to competitive tendering to answer this question.

4.2 Competitive Tendering: Definition

It is first, of course, necessary to specify what is meant by competitive tendering. The RIA defined competitive tendering as follows:

In a franchise bidding system, a local authority ... issues a tender the winner of which will be the sole provider of household waste collection services, under contract, in accordance with a given service level, for a given period of time, and for a given geographic area, i.e. a local market. In simple terms, an auction is held for the right to deliver a service on a monopoly basis. It is during this auction when competition occurs, as the bidding firms compete to win the tender by offering bids. The successful bidder is the firm which offers the lowest combination of price to the householder and/or meets the service quality standards (DEC&LG, 2012a, p. 62).

The RIA recognises local authorities are the most appropriate administrative unit to conduct the tendering, which is consistent with the practice elsewhere (CCPC, 2018, para. 3.14). The CCPC (2018, para. 2.30) has concluded in a number of merger cases that local authority areas are the relevant geographic market. The local authority is likely to have information and knowledge concerning local conditions

and preferences that are hard for a national economic regulator in Dublin to replicate.¹² In order to minimise the costs of bidding and so attract the maximum number of bidders to the extent possible, the information made available to bidders by local authorities should be in common format, the nature of the contractual terms and conditions should be the same, and the service characteristics similar. The contract length should be sufficient that the bidders can recover any sunk costs.

The tender should also be structured to meet various environmental objectives, including waste segregation, pay by weight charging, mandatory reporting of illegal dumping and universal service provision (CCPC, 2018, para. 3.6). There are likely to be fewer collection vehicles under competitive tendering resulting in lower CO₂ emissions and less congestion, especially in urban areas. Furthermore, if the geographic area included in the local authorities' tenders covers all households then this will constitute a universal service obligation, given that a uniform or single price is charged. If the tender is structured with penalties for non-compliance then local authority has a higher degree of control over the industry as compared to side-by-side competition (CCPC, 2018, para. 3.17; CCMA, 2018, p. 16).

In some cases it may make sense for local authorities that are contiguous to one another to organise a joint competitive tender. For example, at one point the four Dublin local authorities combined the tender for the provision of green bin collection services for dry recyclables. Advice on the tendering process could be provided to local authorities by the Office of Government Procurement (OGP).¹³ No doubt the OGP would draw upon the expertise of local authorities in Northern Ireland, other parts of the UK which are familiar with HHW tendering and elsewhere. (See, for example, OFT, 2006). The expertise of the CCPC could also be called upon to ensure that tenders are structured in such a way as to reduce the opportunities for successful bid-rigging by HHW operators.

4.3 Competitive Tendering: High Barriers to Entry?

The first criterion, according to the CCPC (2018, p. 62), justifying *ex ante* regulation is the “presence of high and non-transitory barriers to entry”, which is not attained under competitive tendering. Barriers to entry are low to medium as compared to the high barriers to entry under side-by-side competition. But on what basis can such a conclusion be reached when the same non-transitory economies of scale and density are present? The answer revolves around the nature of

¹² For example, the CCMA (2018, p. 2) point out that “high density collection would have a one compartment truck collecting one waste type and would collect up to 880 lifts in 5 hours”. In contrast, “the rural route collection would be a compartmentalised vehicle collecting several waste streams simultaneously and would only collect up to 260 lifts in 9 hours”. Hence in combining geographic areas with different household densities the implications of different collection vehicle configurations would need to be taken into account, perhaps leading to somewhat different collection frequencies.

¹³ For details see: <https://ogp.gov.ie/>. One of the aims of the OGP is to encourage SMEs, hence mitigating one of the implementation risks.

competition. Under side-by-side competition, for reasons set out above, incumbents may have scope to reach tacit agreements and understandings not to compete with rivals in adjacent geographic markets, while the ability to cut prices selectively combined with economies of scale and density (i.e. low, if not zero marginal costs) discourages new entrants.

Under competitive tendering, competition takes place for the right or the contract to supply the HHW collection service as specified in the tender documents. The incumbent has few if any advantages over new entrants, provided that enough reliable market information is provided to bidders – and the OGP and the local authority would have a strong interest in ensuring this condition is met. Reaching and enforcing tacit understandings as to which collectors would win particular tenders would be much more difficult for the same reasons outlined above concerning an incumbent boycott of any attempt by the State to introduce competitive tendering.

In effect under competitive tendering, the right to service all households in a given geographic area are simultaneously available to the successful bidder. The entry cost is that of preparing the bid and ensuring the infrastructure necessary to deliver the service is available. The corollary for side-by-side competition is the cost of acquiring the local authority client list when the local authority withdrew from HHW collection. Although the client list acquisition costs are typically not available due to concerns over business secrets, in some cases this is not the case: Country Clean paid Cork City Council between €166 and €180 per household for client lists in 2010/2011 (DEC&LG, 2012a, p. 99). In the case of Dublin City Council with 140,000 households it is difficult to imagine that the tender costs are going to be anywhere near €22.4 million to €25.2 million (i.e. $140,000 \times €166 = €22.4$ million; $140,000 \times €180 = €25.2$ million). Of course, once the HHW collector becomes the incumbent then under side-by-side competition any new HHW collector has to sign up each new customer household by household.

4.4 Competitive Tendering: Lack of Effective Competition?

The second criterion to support *ex ante* regulation is as stated by the CCPC (2018, p. 62) that “market structure ... does not tend towards effective competition within the relevant time horizon”. The evidence suggests that this condition is not met. There are several classes of bidders: collectors that currently serve a series of geographic markets across Ireland; others with a more local or regional focus;¹⁴ and international bidders which, as noted above, have been reportedly discouraged from entering the Irish market due to its side-by-side nature (i.e. the costs, difficulties and uncertainties of ensuring enough existing households switch so as to make entry profitable). Incumbent HHW operators are likely to have developed expertise in competitive bidding or tendering in various commercial waste streams.

¹⁴ The Irish Waste Management Association, the representative body whose members account for 75 per cent of HHW, present details of HHW operators by geographic location: <http://iwma.ie/household-waste/iwma-members-in-your-area/>.

(See, for example, M/09/024 – *Greenstar/Veolia (Ireland)*, paras. 3.36, 3.45-3.49 and 5.18). International bidders would often also be familiar with HHW tendering. This will also apply to some existing HHW collectors in Ireland since some local authorities such as the four Dublin local authorities procured green bin collection through tendering. Currently apartment complexes might, for example, secure waste collection through tendering. As noted above, the use of common tenders and standard documentation lowers the costs of bidding and hence is likely to encourage more rather than fewer bidders.

Another aspect is the likely impact of competitive tendering in terms of prices compared to side-by-side competition, especially as it evolves into a series of local monopoly providers. Here the evidence is solid. The RIA summarises it as follows:

Firstly, international experience suggests that contracting out provides best value for money and is generally less costly than in-house provision. Secondly, where competition in the market is compared, it is more expensive than either public or private provision on a monopoly basis. Lastly, municipalities which contract out waste collection have control over the environmental impact of the waste collection provision, a factor which is noted in many of the articles referenced (DEC&LG, 2012a, p. 40).

The RIA's comparison of HHW waste charges between Cork – side-by-side competition – and Belfast – competitive tendering – found, as noted above, that for Cork the annual per household charge was 30 per cent lower.

4.5 Competitive Tendering: Insufficiency of Competition Law?

The third criterion is that the “insufficiency of competition law alone to adequately address the market failure(s) concerned” (CCPC, 2018, p. 63). Again the criterion is not met. There are a number of ways in which firms can thwart the impact of competitive tendering and thus lead to market failure. The most obvious is for potential bidders to agree beforehand to allocate bids by local authority so that prices will exceed cost, where cost includes a normal rate of return. In other words, rents are being earned.

As noted above, the diversity of firms bidding for the contracts makes successful bid-rigging problematic. However, notwithstanding that, such bid-rigging is subject to a by object prohibition under the Competition Act 2002. Hence collectors run the risk of criminal prosecution resulting in fines and/or jail sentences.¹⁵ Potential bidders should be made aware of these consequences by the

¹⁵ This needs to be qualified in view of Ireland's first recent bid-rigging case involving commercial flooring. The defendants pleaded guilty faced with compelling evidence that the CCPC had assembled. The subsequent Court decisions, at both trial and on appeal, however, employed an inappropriate methodology for determining the sanction lessening the effectiveness of competition enforcement. For further details see Gorecki (2017; 2019). On the CCPC's enforcement with respect to the behaviour of the HHW sector to the introduction of pay by weight see Gorecki (2016), which related to the events described in CCPC (2018, paras. 3.29-3.33).

OGP and the local authorities and advice should also be sought from the CCPC as to the optimal timing of procurement competitions so as to minimise the opportunity for successful bid-rigging.

In relation to merger control there is always the danger that especially aggressive bidders for HHW franchises could be acquired by incumbents to prevent such mavericks from disrupting any tacit or formal marketplace agreements. Again the Competition Act 2002 prohibits mergers that substantially lessen competition. Ireland has a compulsory notification merger regime, but as the CCPC (2018, para. 3.50) study points out, the majority of mergers and acquisitions which occur in the household waste collection sector involve small operators whose turnover falls under the CCPC's merger notification thresholds and, thus, are not required to be mandatorily notified.

However under the Competition Act 2002, the Minister responsible for competition policy may specify a class of mergers that has to be notified to the CCPC irrespective of the turnover. To date the only class of such mergers are media mergers.¹⁶ However, there is no reason in principle why it could not be extended to cover HHW collection.

The CCPC has conducted merger reviews involving leading HHW collectors: M/09/024 – *Greenstar/Veolia (Ireland)*; and M/16/008 – *PandaGreen/Greenstar*. If there were competitive concerns over below threshold acquisitions by these HHW collectors then it is possible for the merger to be cleared by the CCPC subject to the merged entity voluntarily notifying all such mergers to the CCPC, so that a competition assessment can be conducted prior to any such merger being implemented. Such a condition was, for example, included in M/04/051 – *Grafton/Heiton* and M/18/067 – *LN-Gaiety/MCD Productions*.

In sum, there is no justification for *ex ante* regulation using the CCPC's three-fold test when the market design is competitive tendering. None of the tests are met. A national economic regulator is not justified. This conclusion is strengthened by the CCPC (2018, para. 5.17) study's observation that "regulation ... is only undertaken as a last resort due to actual or expected market failure".

V UNIVERSAL HHW COLLECTION AND CROSS-SUBSIDY

In raising the issue of a cross-subsidy via the combining of a geographic area which has a commercially viable HHW collection service with an area where the collection service is less viable or not viable, the CCPC study identifies the important issue of securing access for all households to a HHW collection service at reasonable cost. Such universal service is likely to result in broader environmental benefits in that there is assurance that all households dispose of HHW waste in an appropriate manner and have the correct incentives to minimise waste. The incidence of

¹⁶ Andrews *et al.* (2015, pp. 272-4).

households that illegally burn their waste or dispose of the waste in some other unregulated manner (e.g. fly-tipping) is likely to be reduced.¹⁷

At the present time there is considerable variation in the degree to which HHW collection services are used by households. Table 2 for 2015/2016 presents, by local authority and waste region, the percentage of occupied households that avail of the services of a HHW collector (collection or participation rates). In several instances the data suggest something close to universal use of a HHW collector: DLR, Fingal, South Dublin, Louth, Galway City and Cork City all have collection rates between 90 and 100 per cent. At the other end of the spectrum Donegal has a collection rate of only 28 per cent. In between are local authorities such as Kerry, Kilkenny, Offaly and Cavan which have collection rates around 50 per cent. Overall the collection rate for Ireland, according to the CCMA (2018, p. 7), is 72 per cent; in 2010 the collection rate was 71 per cent (DEC&LG, 2012a, p. 43).

The CCPC (2018, para. 4.9) argues, not unreasonably, that population density is an important factor in determining collection rates. In low density areas, local authorities' HHW collection charges may be prohibitive and hence there are limited HHW collection services compared to the much more densely populated local authorities that can realise economies of scale and density. In order to investigate the matter further, Table 3 presents collection rates for the six most urban (i.e. high density) and six most rural (i.e. low density) local authorities in Ireland. Apart from Dublin City Council, all the urban local authorities have collection rates between 92 and 99 per cent suggesting universal service provision.¹⁸ In contrast, although the rural local authorities have on average lower collection rates – 59 per cent vs. 93 per cent – what is striking is the variance of collection rates. The most rural local authority, Leitrim, has a collection rate of 83 per cent, while the sixth, Monaghan comes in at 72 per cent, and Donegal at 28 per cent.¹⁹

This suggests that there are factors at work in determining household collection rates that are independent of household density (CCMA, 2018, p. 9). In the case of Leitrim, for example, the CCMA (2018, p. 8) comment that the local County Council introduced bye-laws “making it mandatory to join a collection service and they did reach 83% participation from a low of just over 50%”. More recently bye-laws have been introduced across the State by local authorities:

¹⁷ CCPC (2018, para. 4.12) estimates 3 per cent of households dispose of their waste in an unregulated way. It should be noted “that the burning of waste is not simply a rural phenomenon” (ibid, p. 44). For further discussion, see DEC&LG (2012a, pp. 42-45).

¹⁸ The data in Table 2 refer to occupied households that have a HHW kerbside collection service. In some instances households may use bags, especially in the inner city where streets are narrow, houses front on to the street and have no rear access and/or there are other limitations on storage. According to the EMWR (2015, p. 87), “[H]ouseholders availing of a bag collection service are not currently registered with a service provider as bags are purchased at retail outlets. This makes it difficult to estimate how many of these households avail of a paid service”. It appears that this is one of the reasons for the much lower collection rate reported in Table 3 for Dublin City compared with the other local authorities in the left hand column of the Table.

¹⁹ But Donegal has, according to CCMA (2018, p. 8), “a very high distribution of Civic Amenity sites”.

obliging consumers to participate in an authorised waste collection service or provide documentary proof on what alternative means they use to dispose of their waste, and encouraging greater segregation of waste to reduce volumes of residual waste collected. This means that from now on, every household must be able to prove that they have a contract in place with an authorised waste collector or that they regularly use a civic amenity site or recycling centre.²⁰

This is likely to lead to a further boost in the levels of households availing of HHW collection as compared to those in Table 2.

Table 2: Households Using a HHW Collection Service, by Waste Region and Local Authority, 2015/2016

<i>Area</i>	<i>% Households served by HHW collector</i>	<i>Area</i>	<i>% Households served by HHW collector</i>	<i>Area</i>	<i>% Households served by HHW collector</i>
Southern Region	65	Connacht/Ulster Region	58	Eastern-Midlands Region	82
Carlow	64	Cavan	54	Dublin City	74
Clare	61	Donegal	28	Dun Laoghaire Rathdown (DLR)	99
Cork City	98	Galway City	92	Fingal	98
Cork Co	57	Galway Co	62	South Dublin	97
Kerry	51	Leitrim	83	Kildare	84
Kilkenny	50	Mayo	59	Laois	59
Limerick	65	Monaghan	72	Longford	79
Tipperary	66	Roscommon	48	Louth	96
Waterford	78	Sligo	71	Meath	72
Wexford	76	–	–	Offaly	55
–	–	–	–	Westmeath	74
–	–	–	–	Wicklow	53

Source: CCMA (2018, pp. 7-8).

Note: The number of occupied houses is based on CSO data for 2016; the total number of houses using kerbside collection using National Waste Collection Permit Office annual returns is for 2015. There are 31 local authorities (i.e. 26 County Councils; three City Councils – Cork, Dublin and Galway; and two City and County Councils – Limerick and Waterford).

Delivering universal service with uniform prices in the face of a variation in costs can be achieved through the CCPC's suggested cross-subsidy between households in one geographic area. An argument against such a cross-subsidy is that it raises the price of collection in the commercially viable area and lowers the price in the area where service is less viable. Thus some households in the former area may be

²⁰ <https://www.mywaste.ie/my-household-waste-by-laws/>.

Table 3: Households Served with a HHW Collection Service, by Urban and Rural Local Authorities, 2015/2016

<i>Local Authority Ranked by Urban Area</i>	<i>% of Population in town areas</i>	<i>% Households served by HHW collector (collection rate)</i>	<i>Local Authority, Ranked by Rural Area</i>	<i>% of Population in rural areas</i>	<i>% Households served by HHW collector (collection rate)</i>
Cork City	100	98	Leitrim	89.3	83
Dublin City	100	74	Galway Co.	77.8	62
Galway City	100	92	Roscommon	73.2	48
Dun Laoghaire					
Rathdown (DLR)	98.8	99	Donegal	72.7	28
South Dublin	98.0	97	Mayo	71.4	59
Fingal	92.7	98	Monaghan	70.7	72
Average	98.3	93	Average	75.8	59

Source: CCMA (2018, pp. 7-8) and Central Statistics Office, Census of Population.

Note: Collection rates are derived from Table 1; the percentage of the population in town areas refers to towns with a population of more than 1,500, while rural areas refers to the percentage of the population not in towns (i.e. population of town areas less than 1,500 persons). The town/rural split are for 2016 and are based on the Census of Population for that year.

priced out of the market, while more of those in the latter area will avail of HHW collection. However, it is not clear how much weight should be attached to such an argument in the context of HHW collection. After all even in local authority areas which can be characterised as rural collection, rates reach 83 per cent.

Any adverse impact of the cross-subsidy could be offset by the introduction of waivers for poorer households.²¹ Such households are most likely to be sensitive to any HHW collection price increase. Waiver systems existed prior to the withdrawal of local authorities from HHW collection. If linked to an existing benefit that targeted low income households, such as, for example, the General Medical Services scheme, then this is likely to minimise administrative costs and could be applied on a State-wide basis. Any waiver system should incorporate pay by weight incentives so as to incentivise households to minimise waste.²²

²¹ According to CCMA (2018, p. 10-11) only Limerick City and County Council operate such a scheme at the present time. In 2017 the DCCA&E (2017) announced an annual support of €75 for persons with lifelong/long-term medical incontinence. The importance of waivers was reduced as the local authorities withdrew from HHW collection (DEC&LG, 2012a, p. 56; Government of Ireland, 2019, Annex 1, Measure 14).

²² HHW collector's charges are often a two-part tariff: a fixed and variable charge with the latter reflecting pay by weight. Hence a waiver system could reduce if not abolish the fixed part of the tariff (since that does not incentivise waste reduction/recycling) and retain either in whole or in part the variable charge, which is the pay by weight component.

Furthermore, as argued in Sections III and IV, competitive tendering is a better market design than the current side-by-side model. By eliminating rents and needless duplication of services, HHW charges are likely to be lower than they otherwise would be: using the comparison between Cork (side-by-side competition) and Belfast (competitive tendering) as an example would see a 30 per cent reduction in HHW charges. Such a reduction would go a considerable way to offset the impact of any cross-subsidy on HHW charges, while it might also be easier to administer any waiver programme under competitive tendering where there is only one HHW collector per franchise area.

VI CONCLUSION

The DCCA&E announced in 2019 that it is to commence a review of its 2012 Policy. Such a review is merited. HHW collection is, albeit gradually, moving towards a series of unregulated local monopoly providers, which, combined with high barriers to entry, creates the conditions for HHW collectors to earn rents.

So much for market failure, but how should it be cured? The policy package recommended here is; competitive tendering at the local authority level, assisted by the OGP (advice on the tendering process), and the CCPC (guidance on how to structure the tenders so as to reduce the opportunities for bid-rigging).

Internationally competitive tendering is the norm for HHW collection. Earlier HHW studies with respect to Ireland favoured competitive tendering. The implementation risks of moving from the status quo (i.e. side-by-side competition) to competitive tendering do not stand up to scrutiny.

The local authority has been historically directly involved in HHW in Ireland. It already provides local services for its residents, sometimes in co-operation with adjacent local authorities. It has local knowledge concerning preferences and issues surrounding HHW collection. It is the appropriate administrative unit to implement competitive tendering.

The benefits of competitive tendering include: HHW collection charges should be more attractive as rents are eliminated; CO₂ emissions and congestion costs reduced as there is no inefficient duplication; and, complementary mechanisms can ensure that HHW collection charges do not get too high in low density areas, thereby protecting the positive externalities of broader take-up of HHW collection services.

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