Submission to the Department of the Environment, Heritage and Local Government

Draft Statement of Waste Policy

Submission S/10/005

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The Competition Authority
An tÚdarás Iomaíochta

Table of Contents

1. SUMMARY

1.1 The Competition Authority welcomes this opportunity to comment on the Draft Statement of Waste Policy ("the Draft Statement")

1.2 We recognise that Ireland must comply with specific European Directives and policies in the area of waste management. Our national waste management policy must be formulated within the context of the internationally adopted waste management hierarchy. However, it is crucial for Ireland's national competitiveness that the overall cost of waste collection is kept as low as possible.

1.3 Competition policy is compatible with waste policies. Competition in the waste management sector can keep collection costs down for business and households. Combined with effective regulation, competition policy and environmental policy can complement one another to facilitate and encourage the disposal of waste in line with the waste management hierarchy. Understanding the role of competition in the waste sector is essential to obtaining the best possible outcome for the environment, national competitiveness, businesses and consumers.

1.4 This submission outlines the benefits of competition in waste management and how the waste management policies in the Draft Statement would affect competition.

1.5 The Competition Authority's key recommendations are:

- The proposed national framework plan and nationally administered arrangement should incentivise competition among waste management service providers at each level of the waste management hierarchy, and allow flexibility for the introduction of new technology.

- The benefits derived from economies of scale and the benefits of competition must be carefully balanced in the national framework plan.

- The "nationally administered arrangement" should not have any responsibility for price setting, either on a national or a regional basis.

- A flexible system of levies in line with stated public policy objectives would be better than directing waste to particular treatment facilities.

- Competitive tendering is preferable where side-by-side competition does not appear to work well for consumers.

- Where competitive tendering is introduced, practical issues involved in designing the tender must be carefully considered in order to maximise the number of credible tenders.

1.6 The Competition Authority would welcome the opportunity to meet the Department to discuss this submission in detail.

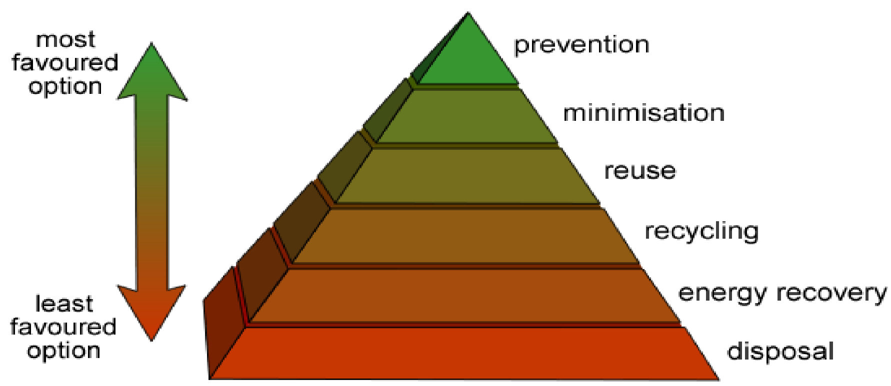
2. THE BENEFITS OF COMPETITION IN THE WASTE SECTOR

2.1 The Competition Authority's mission is to make sure that competition works well for consumers and the Irish economy. Competition benefits everyone: consumers, businesses and the economy as a whole. It encourages companies to provide both a quality service and a fair price. In a competitive market, firms are efficient and are rewarded for their investments by the customers. Therefore, competition keeps prices down, improves choice and quality, fosters innovation in the form of new products and services and supports economic growth. In contrast, monopolies can lead to high prices, lower quality of services and inhibit innovation in the industry.

2.2 The waste management industry - specifically the household waste collection industry - has seen the benefits competition can bring in recent years. The introduction of competition to waste collection meant that waste management service providers were encouraged to keep their prices down and improve service quality. CSO household budget survey data for household collection costs suggests that prices have fallen sharply since 2006 for household waste collection. The Competition Authority estimates that Greenstar and Panda offered monthly savings of between 20% and 30% compared to Dun Laoghaire Rathdown County Council before the Council pulled out of the market early this year.

2.3 The benefits of lower prices and better quality of service can be compatible with EU Directives and the internationally adopted Waste Management Hierarchy (Figure 1).[1] The most preferred option for waste management is prevention and minimisation of waste, followed by re-use and recycling, energy recovery and, least favoured of all, disposal in landfill.[2]

Figure 1: The Waste Management Hierarchy



[1] The EU Landfill Directive (1999/31/EC) and the EU Packaging Directive (2004/12/EC).
[2] See page 8 and 9 of Forfás (2009) "Waste Management in Ireland: Benchmarking Analysis and Policy Priorities" for more information. See link: *http://www.forfas.ie/media/forfas090819_waste_benchmarking.pdf*

2.4 When combined with effective regulation, competition contributes towards the achievement of the Waste Management Hierarchy. For example, competition between recyclers pushes down the price of recycling and this encourages recycling, where at the same time regulation can be used to raise the price of landfill and thus disincentivise disposal in landfill. That is, competition can encourage service providers to offer a cheaper and better quality green bin collection service compared to their competitors. Once there are levies in place to ensure that the price of black-bin collections is high **compared** to the price of green bin collections, this will divert waste away from landfill and encourage recycling.

2.5 There are two main areas where competition can bring further benefits – in **household waste collection** and upstream in the **waste treatment** area.

Household waste collection

2.6 Competition in the household waste collection industry has grown in recent years following a large increase in private sector involvement. Previously, local authorities were generally the sole providers of household waste collection services.

2.7 While collection costs remain high by international standards, the rivalry created by side-by-side competition has encouraged operators to lower their prices through the use of more efficient technology and work practices.[3] There is also evidence that service quality has improved. For example, some private operators offer additional glass collection services as a way of attracting customers, and some offer more frequent collection of green bin to gain customers.

2.8 While side-by-side competition has brought benefits to consumers, it may not always be efficient to have more than one waste collector in a local area. For example, in some sparsely populated rural areas, it is more efficient to have one collector serving the region. Because the cost of collecting waste is higher, where population density is lower. In some areas, the population may not be sufficient to support two collectors.

2.9 In such cases, competition could operate more effectively through competitive tendering, where the local authority or "nationally administered arrangement" contracts out the service to the most efficient waste collector available. This is also referred to as competition **for** the waste collection market. In the course of competitive tendering, the contract is awarded to the collector who offers to provide the best quality of service at the lowest price to consumers, for a defined period of time in a defined geographic area.

2.10 However, there is a danger associated with having a single service provider: the creation of local monopolies in waste collection services. Lack of credible competitors could lead to the same collector winning the contract repeatedly. The local monopoly collector could lose the incentive to innovate and reduce the cost of collecting waste. In the long term, prices for collection could rise and quality of services could fall. Obviously such a situation would be harmful to consumers and to waste policy generally.

[3] See Forfás Waste Benchmarking Report for comparisons.

2.11 To effectively eliminate the potential harm associated with a single service provider, care must be taken when designing the tendering process to:

a) re-tender frequently - for example this is done every five years in the UK, and

b) maximise the number of credible tenders.

Appendix A outlines the practical issues involved in designing an effective competitive tendering procedure for waste management services. Methods cited above could encourage the service provider to invest, to innovate, to constantly monitor its costs and to provide quality services to the customers.

Waste treatment

2.12 Competition between waste treatment providers at the same level of the waste management hierarchy is also very important. There is limited use in having effective competition for collection if there is a lack of competition for waste treatment infrastructure. This could result in competitive, efficient waste collectors paying excessive prices to monopoly waste treatment providers. Competition between the waste treatment providers at the same level of the waste management hierarchy, combined with regulation aimed at alignment with the waste management hierarchy, incentivises investment in waste treatment infrastructure and technological development. It ultimately helps operators move up to the waste management hierarchy.

2.13 For example, while there have been significant developments in the area of waste treatment infrastructure, there is still a small amount of mechanical biological treatment (MBT), thermal treatment and reprocessing facilities in Ireland.[4] This means that competition within these facilities (e.g. between MBT facilities) is limited and the cost of using them is probably higher than it could be. Compared to landfill, these types of facilities are higher up the waste management hierarchy. By encouraging competition within these facilities, the cost of using them will fall. Once there are levies in place to ensure that cost of landfill disposal is comparatively high, this will encourage energy recovery and recycling and help lower waste collection costs for businesses and consumers.

2.14 Thus a combination of competition and regulation can incentivise operators to implement national waste management policy.

2.15 Unlike waste collection, waste treatment is more capital intensive, due to the processing facilities required, and this raises challenges in ensuring that a competitive market emerges. Economies of scale play an important role in waste treatment. That is, the larger the flow of material through the treatment facility, the lower unit costs are for the waste treatment. A few big waste treatment centres are probably cheaper to run than many small ones. However, if there is only one big waste treatment centre in the country, the monopoly cost of the treatment will be high and it would be damaging to waste policy,

[4] See page 24, Waste Management in Ireland: Benchmarking Analysis and Policy Priorities 2009, Forfás.

especially if the treatment method is particularly favoured by the waste management hierarchy.

2.16 Another important feature of waste treatment that must be taken into account is the cost of transporting waste from point of collection to the waste treatment centre. This cost tends to be high relative to the value of waste material. This is because most waste materials are bulky and of relatively low value. Unnecessary transportation imposes costs, not only on waste treatment operators but also on society in general through the emissions generated. Therefore, the optimal number of waste treatment facilities should balance economies of scale, competition and transport cost and the negative externalities associated with transport.

Competition and environmental goals

2.17 It is important to note that while competition is likely to reduce the overall cost of disposing black bin waste for landfill and recyclable green bin waste, it is the relative price between these bins that determines consumer behaviour. For example, if a local monopolist charges €10 to collect a black bin and €5 to collect a green bin there is a price ratio of 2:1. If a near provider enters the market and charges €5 to collect a black bin and €2.50 to collect a green bin, there is still a price ratio of 2:1 meaning there is still a strong incentive to recycle. However, significantly, the overall cost of disposing waste has fallen, which is good news for consumers.

2.18 Regulation to ensure waste management is in line with the waste management hierarchy should focus on **aligning** incentives with the hierarchy. The costs and technologies of each level of the waste management hierarchy are complex and will be constantly changing. A flexible system of levies in line with stated public policy objectives would be better than directing waste to particular treatment facilities. The levies could be altered to reflect changes in the economics of waste management. Directing waste to particular treatment facilities could hinder competition between treatment facilities at the same level of the hierarchy.

3. WASTE MANAGEMENT PLANNING & REGULATION

3.1 The Draft Statement proposes:

a) Planning of waste management requirements, in particular in relation to infrastructure, would be better achieved if supported by a national framework plan;

b) Rationalising the waste regulatory functions of local authorities into a single nationally administered arrangement.

3.2 The Competition Authority considers that there are potential benefits in moving to a national framework plan and a single nationally administered arrangement, provided that the national plan and administered arrangement:

- incentivise competition among service providers, and
- allow flexibility for the introduction of new technologies in waste collection and waste treatment.

3.3 A national framework plan would offer greater consistency in terms of establishing what is required of waste collectors when providing waste collection services in any region. It is also vital for the co-ordination and consistent implementation of essential waste treatment infrastructure.

Planning of waste management requirements would be better achieved if supported by a national framework plan

3.4 There are currently 10 different regional waste management plans with separate plans for Wicklow, Kildare and Donegal. Local authorities have different standards and requirements for waste management. For example, a private waste collector may or may not have to provide a three bin collection system depending on what region they are operating in.

3.5 Planning of waste management through a national framework would remove any uncertainty in this area and make it easier for waste collectors to plan ahead and invest in equipment that may provide them with a competitive advantage over there competitors.

3.6 According to Forfás, coordinating the regional waste management plans at a national level would also "*stand to attract investment in waste infrastructure in a way that would maximise potential economies of scale, competition, and enables the market to pass on the benefits to businesses and consumers*". [5]

3.7 The Authority appreciates the benefits associated with this policy proposal for these reasons. However, it is vital the national framework plan carefully balances the benefits derived from economies of scale and from competition.

3.8 One danger related to a national framework plan is the potential to create local monopolies for waste collection and waste treatment. For

[5] See page 26, Waste Management in Ireland: Benchmarking Analysis and Policy Priorities 2009, Forfás.

example, it could be argued that economies of scale would be maximised if there was one large recycling facility in Ireland. However, monopoly provision of any treatment infrastructure will also tend to increase costs, which would be damaging if the treatment method is favoured by the waste management hierarchy. Having several competition facilities would encourage costs to fall.

3.9 It is also essential that the national framework plan is not so rigid as to prevent the introduction of better and more efficient treatment technology. The national framework plan should be able to accommodate innovation and not unduly restrict the choices of suppliers. For example, when a better and more efficient treatment technology can be adopted, the national plan should be able to change in order to accommodate investment in the new technology.

Rationalising the waste regulatory functions of local authorities into a single nationally administered arrangement

3.10 Similar to the principle of the national framework policy, rationalising the waste regulatory functions of local authorities should provide existing companies and potential entrants with a greater level of certainty with regard to how waste collection and treatment markets will be structured (i.e. side-by-side competition or competitive tendering) and what they need to do in order to get a collection permit. Improved certainty and consistency across the country will encourage investment in new waste treatment infrastructure, promote competition among waste collectors and in waste treatment infrastructure, help lower waste collection costs, and facilitate new entry for waste collection and treatment.

3.11 Competition should also benefit from this rationalisation for the following reasons:

- The dual role played by some local authorities - who act as both regulator and competitor in local markets - can create difficulties for their private sector competitors and for local authorities themselves and harm competition. The rationalisation proposal may resolve this dual role played by some local authorities. This issue is outlined in detail in Appendix A of this submission.

- If competitive tendering for household waste collection services is introduced, the specific procurement expertise required to work out the geographic market to be tendered- could for example be centralised under one roof. This may increase the likelihood of the benefits of competitive tendering being maximised. Appendix A outlines the practical issues involved in the tendering process.

3.12 From a competition perspective, it is important that the move towards rationalisation appreciates the benefits of competition as outlined in Section 2, and in particular the positive role that private operators have played over the years. [6]

[6] See paper "Perspectives on Irish Productivity that outlines the benefits of contracting out/competitive tendering in Ireland" Palcic and Reeves http://www.forfas.ie/media/productivity_chapter11.pdf.

3.13 The Competition Authority would strongly recommend that the nationally administered arrangement should **not** have any responsibility for price setting, either on a national or a regional basis.

3.14 Setting a national price for waste management would have substantial adverse effects on consumers. Generic prices on a fixed state-wide basis would lean towards a higher rather than a lower price, to ensure that a service is provided to all households, including those that have a higher cost of service delivery than others. In such case, there is no incentive for service providers to innovate and reduce the costs of operating the services.

3.15 It would be a very difficult process to set a national price for waste management. Imposing a standard price on an industry characterised by widely varying cost conditions (due to different population densities, distance from disposal facilities, transport costs, recycling/disposal arrangements, etc.) across different geographic markets and through time is likely to create inappropriate investment incentives in the sector.

3.16 The costs and technologies at each level of the waste management hierarchy are complex and will be constantly changing. A flexible system of levies in line with stated public policy objectives would be better than directing waste to any particular treatment facilities. The levies could be altered to reflect changes in the economics of waste management. Directing waste could hinder competition between treatment facilities at the same level of the hierarchy.

4. COMPETITIVE TENDERING

4.1 The Draft Statement envisages the phased introduction of competitive tendering for household waste collection services from 2015.

4.2 Local authorities would be made responsible for the collection of household waste within a framework for the introduction of competitive tendering. Where local authorities wish to compete alongside the private operators for such markets, an independent assessment process would be required to facilitate the tender competition and adjudication of the award of contracts.

4.3 The Competition Authority welcomes these developments. Following an investigation in 2005, the Competition Authority found that a lack of competition in the provision of household waste collection services, and the existence of localised monopolies in a number of geographic areas across the State, indicated that competition was not working well for all consumers.[7] A combination of economies of scale and density, as well as regulatory delays in establishing sorting/recycling facilities, constitute significant barriers to new entry and expansion in this market.

4.4 The Authority recommends that competitive tendering is preferable **where side-by-side competition does not appear to work well**. The Competition Authority is generally in favour of retaining side-by-side competition, but only where it appears to be working well for the consumer. Where competitive tendering is brought in, it needs to be well designed. Appendix A outlines practical issues involved in designing a competitive tendering process in waste collection.

Waste Collection

4.5 While side-by-side competition can offer consumers a cheaper and better quality collection service, compared to sole provision by a local authority, there are a number of pitfalls associated with this system of collection:

- Economies of scale and density cannot always be maximised;[8]
- The desire to reduce costs can result in lower service quality;
- Collectors can "cherry-pick" customers in more affluent areas;
- A collector's dominance in a particular area can act as a barrier to entering that area.

4.6 It is possible that many of the pitfalls associated with side-by-side competition could be addressed in some areas by way of stricter licensing and/or permit requirements. Retaining some side-by-side competition may also benefit the competitive tendering process. That

[7] The Competition Authority conducted an investigation into consumer allegations that Greenstar had abused its dominant position by charging "high" or "excessive" prices for household waste collection. The Greenstar decision note is available at: www.tca.ie.

[8] Economies of scale refer to the reduction in costs that occurs as the scale of an operator's output is increased. Economies of density refer to the reduction in collection costs that occurs as population density increases.

is, using a mix of side-by-side competition and competitive tendering may yield a better outcome for consumers.

4.7 Competitive tendering can also remedy these pitfalls and make the market work better for consumers. Through competitive tendering, economies of density and scale are maximised and consumers may benefit from lower waste collection charges. For example, compared to a situation where three trucks are servicing one street, a sole operator with a guaranteed customer base can cut costs by using larger more efficient trucks - an example of economies of scale, and by being able to collect all of the bins on a route – an example of economies of density.

4.8 Competitive tendering can also improve service quality, address the issue of cherry-picking and encourage the construction of treatment facilities that adhere to the waste management hierarchy. For example, the contract can (a) specify the minimum level of service to household that is required, (b) stipulate that the operator must collect waste from every household in a particular area, and (c) state the maximum amount of waste that the operator can dispose of in landfill.

- The contract should not specify that collected waste must be directed to a particular waste treatment facility. Instead, the contract could limit the amount of waste that can be sent to landfill.

- Penalties and rewards can be built into the contract to ensure that standards are adhered to.

4.9 While it may be difficult for the Department or a local authority to determine whether side-by-side competition is working well in a particular area, there are a couple of easily identifiable characteristics. For example, how many operators are there? Is it easy for new operators to enter? How do the prices in that area compare nationally? Clearly, if there is only one private operator and the prices are high, competition is not working well for the consumer. Where this occurs, or is likely to occur, it may be preferable that a system of competitive tendering is introduced.

4.10 If competitive tendering is introduced nationwide, there is a danger that a few large service providers could win most of the contracts. As a result, many of the small to medium-sized collectors could go out of business. This would reduce the number of future potential bidders and with it, the effectiveness of competitive tendering. Another danger is that the initial provider wins the contract repeatedly and becomes a local monopoly overtime.

4.11 Therefore, to effectively eliminate potential harms associated with a single service provider, care must be taken when design the tendering process to:

a) re-tender frequently - for example this is done every five years in the UK, and

b) maximise the number of credible tenders.

Appendix A outlines the practical issues involved in designing the tender procedure for waste management services. Methods cited above could encourage the service provider to invest, to innovate, to constantly monitor its costs and to provide quality services to its customers.

Waste Treatment Infrastructure

4.12 The above principles of competitive tendering apply to waste treatment infrastructure. One of the critical differences between waste collection and waste treatment facilities is that the latter requires planning permission. Completely transferring the planning risk to the supplier can create uncertainty and increases costs for firms, which will affect their incentives to bid for the contracts. Local authorities have to take this aspect in to account when issuing competitive tendering for waste treatment infrastructure.

4.13 Waste treatment is more capital intensive, big waste collectors are likely to tender for contract which is in the same region for its collection services. This can have both positive and negative effects on competition. It can reduce the cost of transporting waste, indeed reduce the bid cost. It may result in integration of the waste collection and treatment, which in principle can results in few integrated waste management company in the country, which enjoy their regional monopolies.

APPENDIX A - MAXIMISING THE BENEFITS OF COMPETITIVE TENDERING

Maximising the benefits of competitive tendering

Procurement processes need to be carefully designed to capitalise on the benefits of competitive tendering. For example, a poorly designed tender might inadvertently prevent small businesses from bidding or facilitate collusion.

To ensure that the process remains as competitive as possible, procurers should aim to attract as many bidders as possible now and in the future and reduce the likelihood of collusion or bid-rigging. Contract length (i.e. the time period for exclusivity) and breadth (i.e. geographic area) also need careful consideration.

Based on our own analysis and that of the OECD and the OFT, this Appendix provides some guidance on how the Department can maximise the benefits of competitive tendering.[9]

Attract as many bidders as possible

To attract the maximum number of bidders possible, procurers of waste collection services should apply the following principles when designing tenders:

- **Set reasonable participation requirements:** Ideally the bidding process should remain open, to attract a large number of bids. However, if the bidding process is closed, procurers should avoid unnecessary restrictions that may reduce the number of qualified bids, particularly those from foreign firms and SMEs. Pre-qualification requirements should be proportional to the size and content of the contract and avoid specifying how the service is to be delivered.[10]

- **Reduce the cost of bidding:** The cost of bidding can be reduced by streamlining tendering procedures, by allowing adequate time for firms to prepare and submit tenders and by using electronic bidding systems.

Finally, it is important that procurers should think strategically to encourage future competition over the longer term. While company 'X' might offer the best price and service quality in the immediate sense, if they win all the contracts over a period of time, company 'Y' and 'Z' might go out of business. This would have a negative effect on the tendering process in an industry where the number of bids can sometimes be low.[11]

Prevent collusion and bid-rigging

Collusion and bid-rigging between waste collectors can potentially destroy the benefits of competitive tendering. Tender design can play an important role in preventing collusion and bid-rigging, whilst at the same time increasing the likelihood of detection.

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[9] OECD (2009), *Guidelines for Fighting Bid Rigging in Public Procurement* and *Designing Tenders to Reduce Bid Rigging.* Available at: http://www.oecd.org.
OFT (2006), *More competition, less waste.* Available at: www.oft.gov.uk.
[10] The Competition Authority frequently receives complaints of this nature.
[11] OFT (2006), *More competition, less waste.* Available at: www.oft.gov.uk.

To prevent collusion and bid-rigging, procurers should be aware that:

- **The waste collection market is vulnerable to bid-rigging:** Waste collection is relatively simple and, standardised and markets often contain two or three operators. This makes them susceptible to collusion and bid-rigging. It is important that procurers are fully informed regarding the characteristics of the local market (e.g. potential suppliers, products, local prices).

- **Communication between bidders should be limited:** If the procurement process is designed to make it difficult for potential bidders to identify their competitors, then bid rigging becomes more difficult. It is good practice to keep the identity of bidders undisclosed, and to require them to sign a non-collusion certificate.

The Competition Authority published an information booklet on the Detection and Prevention of Collusion Tendering, which comprehensively details some of the common signs of collusive tendering and provides information on steps that procurers, can take to prevent it.[12]

Contract length

Contracts should be of an appropriate length to allow suppliers to recover any sunk costs made when entering the market. Longer contracts can encourage participation by making contracts more attractive to prospective suppliers, whereas shorter contracts could deter participation.

Research by the OFT has indicated that contract length should be set to reflect the need for suppliers to be able to recover sunk costs. As the typical asset life is estimated to be around five years, this can be an appropriate upper limit.

Dual role of local authorities

The dual role played by many local authorities as operator and regulator could dilute the benefits of competitive tendering. For example, it's possible that a local authority would favour their own "in-house" provider over private operators who may be willing to offer a cheaper and better quality service to consumers.

To ensure fair competition between "in-house" and private operators, local authorities should either discontinue providing collection services, or at the very least, require that local authority or "in-house" providers maintain separate accounts for waste collection so that their performance can be demonstrated.[13] A better arrangement might be to establish a separate legal entity for collection services, and full physical separation, e.g. in relation to buildings and staff.

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[12] The booklet is available from our website http://www.tca.ie/images/uploaded/documents/Booklet%20-%20The%20Detection%20and%20Prevention%20of%20Collusive%20Tendering.pdf

[13] An "in-house" provider that maintains separate accounts so its performance can be demonstrated is known as a Direct Service Operator (DSO) in the UK.

Market size

The size of the tendered market has an important role in determining the effectiveness of competitive tendering. The chosen market size should aim to maximise economies of density, scale and the number of bids.

An operator with exclusive rights will benefit from economies of density regardless of market size. However, compared to other utilities (e.g. water) economies of scale in waste collection are not as pronounced. Research indicates that the average cost of providing municipal waste collection services will fall as the quantity of waste collected increases (economies of scale), but only up to the size of the collection vehicle.[14] 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.[15] While this figure could be higher for vertically integrated systems (i.e. where one operator can collect and treat waste itself), this suggests that in terms of market size, bigger is not necessarily better. Therefore, it is unlikely that large firms would have any large cost advantages over smaller firms operating.

Guidance

The Authority recommends competitive tendering where side-by-side competition does not appear to be working well for the consumer. To maximise the benefits of competitive tendering, the Authority recommends the following:

- The procurement process should seek to attract a large number of bids and prevent collusion between waste collectors.

- To attract bids, procurers should reduce bidding costs, set reasonable participation requirements and market sizes, and where appropriate, try to prevent one collector from winning a large number of contracts.

- To prevent collusion and bid-rigging, procurers should be aware that the waste collection market is vulnerable to bid-rigging. Procurers should also remain informed regarding the characteristics of the local market and try to prevent communication between bidders.

- Contract length should be set to reflect the need for suppliers to be able to recover sunk costs. As the typical asset life is estimated to be around five years, this can be an appropriate upper limit.

- To ensure that the benefits are maximised, local authorities should either discontinue providing collection services, or at the very least, require that local authority or "in-house" providers maintain separate accounts so that their performance can be demonstrated. A better arrangement might be to establish a separate legal entity for collection services, and full physical separation, e.g. in relation to buildings and staff.

- The chosen market size should aim to maximise economies of density, scale and the number of interested bidders. An operator with exclusive rights will benefit from economies of density regardless of market size;

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[14] OECD (2000), *Competition in local services: Solid waste management*. Available at: www.oecd.org.

[15] *Collusion in the Dutch waste collection market,* Dijkgraff and Gradus (2005),

however, economies of scale are limited. It is therefore unlikely that large operators would have any cost advantages over smaller operators.

- The need for procurers to fully understand the local waste collection market cannot be over emphasised. For example, procurers need to know how many collectors operate in their locality, how big they are, the relationship between these collectors and the level of entry of exit to and from the market.