Municipal Waste Performance Contracts

A Report for ACR+ and the European Environmental Bureau (EEB)

Dr Dominic Hogg
Joe Papineschi
Rob Gillies
Clare Pitts-Tucker
Amy Slack

13th November 2014

Report for Francoise Bonnet – ACR+ and Stephane Arditi – EEB

Prepared by Dr Dominic Hogg, Joe Papineschi, Rob Gillies, Hara Xirou, Clare Pitts-Tucker and Amy Slack.

Approved by

Dr Dominic Hogg

(Project Director)

Eunomia Research & Consulting Ltd
37 Queen Square
Bristol
BS1 4QS

United Kingdom

Tel: +44 (0)117 9172250
Fax: +44 (0)8717 142942

Web: www.eunomia.co.uk

Acknowledgements

Our thanks to Françoise Bonnet from ACR+ and Stephane Arditi and Piotr Barczak from EEB for their help in producing this report. We also gratefully acknowledge the contribution of Christof Delatter and Pilar Chiva in peer reviewing a draft version of the report.

Executive Summary

E.1.0 Introduction

The overarching aim of this research project jointly commissioned by ACR+ and the European Environmental Bureau (EEB) is to discuss approaches and possible methodologies to implement waste management performance contracts; the main objectives were:

- To identify the technical and financial structure of performance contracting for waste management;
- To identify the potential administrative basis, legal basis and governance of these performance contracts; and
- To identify the necessary conditions for such contracts to be established, including an exposition of challenges and solutions for implementation.

In order to constrain the scope so as to allow a sensible discussion of the main issues, the work concentrates on contracting for municipal waste and on municipalities as the main contracting bodies with private sector waste management companies as the main contractors.

There are many policy initiatives at the EU level which effectively constitute a mandate for the improvement of waste management according to environmental and social objectives. There is also a variety of legislation on public procurement and aspects of contract law which are relevant to the implementation of waste management contracts which contain elements conditional on performance; these are briefly discussed in Section**Error! Reference source not found.**. There has however up until now been little focus on the role of performance based contracting in encouraging the move to a circular economy model. On this subject, Janez Potočnik, at the time European Commissioner for the Environment, highlighted the potential for procurement to support more sustainable business models saying "We are currently using [public procurement] predominantly for the purposes of lowering prices, but we don't use it as an instrument for change to redirect [our economy]."[1] It is hoped that this report will contribute to the development of performance contracting for waste management as one such instrument.

[1] MRW 2014. Volume 203 Issue 19. 21 June 2014. Available at: http://www.mrw.co.uk/news/eu-urged-to-integrate-environmental-and-economic-policies/8664200.article?blocktitle=Latest-news&contentID=2186

With this in mind the report proposes the following definition for performance contracting: that it is *a contract for the management of waste that, through the action of a contractually agreed payment mechanism related to defined performance indicators and targets, incentivise the movement of waste management further up the waste hierarchy, and enhances the prospects for improved resource efficiency and the flourishing of a circular economy*.

E.2.0 Contract Types

The variety of approaches to waste management contracting across the EU poses some problems for a very general exposition of how performance contracts should be designed since it is clear that contractors may have responsibility for varying parts of the overall waste management system. The report therefore considers a range of 'contract scopes' which seem to us to reflect the prevailing practice. Contract scopes considered in detail in Section 4.0 include:

- Communications;
- Re-use and preparation for re-use;
- Waste collection (varying in scope such as conventional household collections, collection of non-household waste, container parks / civic amenity Sites, bulky waste collections and street sweepings;
- Waste treatment; and
- Integrated contracts.

E.3.0 Contract Characteristics

In discussing these variant contract scopes however, it is clear that there is a common set of characteristics for a performance management approach that need to be considered; these are discussed within the report and include the following:

Characteristic	Main Points

Characteristic	Main Points
Degree of control	The scope of the contract and the scope of the performance mechanism, in basic terms, must match up, reflecting how the market works (i.e. the scope of each entity/contractor's services) in different countries. In other words: Factors influencing the performance measure have to be within the contract scope. Incentives which relate to matters over which the contractor has no control will not, for obvious reasons, be effective

Characteristic	Main Points
Application	A potential risk when making certain performance levels contractual is where the nature of the improvement measures required to achieve that level of performance is opposed by other stakeholders such as political stakeholders or residents (e.g. opposition to a particular form of treatment technology or collection system design). This type of risk may be most likely to arise where contracts are concluded in advance of the requisite infrastructure being developed. In most public procurement procedures there is a clear mechanism within the tender and contract documentation for the incorporation of performance management clauses. This may not be as clear-cut for service concessions; here the contractor is likely to be granted more freedom regarding how services are delivered, including in some cases the ability to receive service fees directly from the users of the service. Where these fees are directly related, for example, to the quantity of residual waste collected, there is little incentive for the contractor to work to reduce the amount of this waste collected. Even where performance are clearly established and agreed to before the contract is signed, in practice where performance levels are not reached it can be a difficult, lengthy and time-consuming process to apply contractual default payments. This is all the more reason why it is important for municipalities to apply a 'reasonableness' test before incorporating performance-related payment mechanisms into contracts and are suitably confident that they are legally enforceable.

Characteristic	Main Points
Measuring performance	'Performance' can be measured in two different ways: 1) By measuring outcomes i.e. the extent to which the waste hierarchy is respected or other environmental outcomes e.g. energy use, greenhouse gas emissions, air quality etc. 2) By using measures that more traditionally relate to questions of service 'quality' (where there is a qualitatively characterized relationship between quality and outcomes in terms of the waste hierarchy. Performance indicators should be established with reference to the following principles: 1) The indicator should reflect a genuine improvement in environmental, or other, outcomes; 2) The indicator should be specified in ways that seek to elicit the effect on performance due to the actions of the contractor itself; and 3) The performance measure is ideally specified in terms of a change relative to a baseline. This is likely to allow for the use of stronger incentives, at the margin, for performance improvements.
Performance incentives	Incentives should be used only where they: • Incentivise the application of the waste hierarchy; • Are most relevant to the scope of the contract; • Are in line with the degree of control that the contractor can reasonably be expected to have

Characteristic	Main Points
	over the contracts outputs related to those indicators; and • Avoid the risk of 'double counting' or rewarding or penalising the contractor twice for the same outputs. Options for setting performance incentive targets include: • The buyer of the service sets the target based on figures derived from historic performance and/or with reference to a formal target (set perhaps at a municipality, regional or national level); • The buyer sets the target based on benchmarked performance from other comparable municipalities whereby payment or deduction is made on performance relative to the average achieved by the benchmarked group for the same time period; • The supplier 'bids-back' a target or performance level that they deem achievable as part of the procurement process. This is likely to directly reflect the level of risk of missing the target (primarily commercial, but also, potentially, reputational) that the supplier is willing to price into its offer; or • Hybrid approach - the supplier is invited to 'bid-back' a target level of performance but this has to exceed a level set by the buyer. An alternative to the target-led approach is based on continuous improvement against a baseline; e.g. a payment at a set rate for every 5% annual percentage point improvement in recycling rate achieved by

Characteristic	Main Points
	a recycling collection contract. All of the indicators identified in the main report would require a well-specified baseline, and regular and robust data monitoring in order to be effective. This baseline could be set by the contracting authority, in which case, it seems desirable that these should be included within the contract specification(s) quoted during the procurement process, or developed in conjunction with the contractor, for example, following an initial period of monitoring (e.g. the first contract year). It is important to distinguish minimum standards from those aspects of performance which the incentive is intended influence. i.e. it is important to focus on achieving *additionality* through the incentive mechanism. In general, incentives should not be offered where the benefit to the municipality, or to society in general, or both, is far less than the incentive on offer.

Characteristic	Main Points
Geographical considerations	The geographic scope of a waste management contract should ideally reflect the economically optimum scale for the infrastructure or logistics to provide the services being contracted for. In reality however it is usually limited by the administrative area, which in different Member States across the EU varies from very small to very large. It generally makes sense to benefit from economies of scale, subject to the costs of haulage becoming excessive. The geographical scope should be limited by the point at which economies of scale for infrastructure or logistics are significantly reduced, and risks increase because of the scale of the enterprise.
Duration	There are several general scenarios that can be considered with regard to contract duration: • Shorter durations (less than the lifespan of infrastructure for service delivery); • Longer durations (greater than the lifespan of infrastructure for service delivery); • Where a waste performance contract may push for shorter term goals over the lifespan of a waste management contract. The following potential consequences are worthy of consideration: • Constancy versus flexibility – e.g. providing stability required for long term planning and to attract investment vs. having the flexibility to adjust incentive schedules if they are too, or insufficiently ambitious • Lifespan of the infrastructure and

Characteristic	Main Points
	equipment need to deliver services –Where external funding is needed for the investments in performance improving infrastructure and equipment, then waste management and performance contracts should be tailored to the life of the main infrastructure involved. • Incentive profiling over time - may affect how, and even whether, the providers are able to meet the conditions of the contract. The longer the contract, the more influence the nature of profiling may have on the contractor's decision making and performance. • Desirability of flexibility built in to performance contracting, such as a period for review, lest the contract terms reveal themselves to be too ambitious / generous, or insufficiently so (accepting need to comply with EU Procurement Directive (2014), Article 72 which may, over time, have the effect of encouraging shorter contract terms should municipalities consider flexibility to change contract terms more important than long term contract security. • Similar to previous point - same considerations would apply when considering introducing new performance contracting elements to a contract that is already in place, Additionally, the risk of challenge from the original unsuccessful bidders or other contractors needs to be taken into account. Clearly the best way to avoid any risk of falling foul of public procurement

Characteristic	Main Points
	regulations is to only consider introducing new performance elements at the point at which a new contract is procured. • Need to consider the impact of potential legislative or regulatory changes over the duration of the contract that may impact performance levels required. Also the speed of technologically-driven performance improvements needs to be considered.
Governance considerations	Governance structure of performance management contracts will largely depend on the relationship between the contracting parties. For example, where the client and the provider are part of the same organisation, a service entity and a client entity would need to be created to provide the governance structure necessary for contract-like elements to be implemented.
Relationship with other economic instruments	Performance contracts do not operate in isolation from the wider regulatory and fiscal environment in operation. It is important therefore for municipalities to consider how proposed performance contracts would operate in relation to wider economic considerations. For example: • In countries where the cost of landfilling is currently low, then the financial benefits which flow from waste prevention, preparation for reuse, and improvements in recycling are correspondingly low - the scope, and financial rationale, for offering incentives for managing waste further up the hierarchy away from landfill is lower. Of course, if authorities face specific targets, or if

Characteristic	Main Points
	they anticipate changes in law in future (such as rising landfill taxes), then performance incentives can serve to fill a gap left by the absence of legislation, or its anticipated introduction. • The likelihood that a municipality would opt to introduce a Pay As You Throw (PAYT) scheme is likely to be influenced by the way in which costs may change as the impacts take hold. There is, therefore, a link between the financial rationale for PAYT and the costs of treating / disposing of residual waste. • Where PRO schemes are in operation, the impact of these schemes, including constraints on collection organisations contracted by a municipality to deal with waste streams that sit outside the scheme, need to be taken into account when devising performance indicators.

E.4.0 Contract Examples

The report concludes by bringing together the generic characteristics with a limited number of example contract types to suggest the specific issues and key performance indicators that should be considered. Specific example contract types included are:

- Kerbside/On-Road Container Refuse Collection Contract
- Bulky Waste Collection
- Container Parks / CA Sites
- Recycling Materials Sorting
- Incineration
- Integrated Collection Contract (kerbside and on-road container collection, bulky waste collection and CA Sites)

E.5.0 Conclusion & Recommendations

Attempting to provide a comprehensive discussion of the benefits and mechanics of establishing and improving performance contracting within the waste management sector across the EU within an accessible report structure is an ambitious undertaking. There are numerous different service and contracting types in operation across Member States as well as differences in contract law and the transposition of EU Public Procurement Directives; this variation in the contractual landscape, will have a significant influence on the way in which performance contracts to improve environmental impact in waste management can best be developed.

There are however a few key considerations emerging from this report:

- The aim of moving a larger proportion of waste to be managed at higher levels of the hierarchy is best achieved through the effective application of performance incentives at the collection end of the waste management system;
- Further, performance contracts that cover door-to-door collection where there is a good recycling and biowaste collection scheme in place, and those that also cover bulky waste collection and provision of CA sites can have a more positive effect than, for example, on-road communal containers or container parks; this is due to the fact that in these contracts the contractor is able to more easily directly influence how householders present waste for collection;
- The wider the scope of the contract (i.e. the more waste streams and collection methods in scope), and the wider span of control over outputs that the contractor has, the better chance a municipality has in applying 'whole system' performance requirements which minimise duplication or conflict between different indicators;
- The scope of the contract and the scope of the performance mechanism, in basic terms, must match up, reflecting how the market works (i.e. the scope of each entity/contractor's services) in different countries. Where this is not already the case this can be achieved by the transferral of risks and responsibilities for activities outside of the contractor's scope to that contractor, hence bringing the scope of the contract and the scope of the performance mechanism in line;
- Municipalities should consider which performance indicators to include in contracts carefully and keep them to a few key measures that are predicted to have the most positive effect;
- The performance measure is ideally specified in terms of a change relative to a baseline (which can be linked to a projection if needs be). In other words, it measures a change relative to some nominal standard of performance which can be 'expected'. This is likely to allow for the use of stronger incentives, at the margin, for performance improvements;

- As well as financial incentives, others might relate to matters that are not purely financial. As such, environmentally minded municipalities could consider setting incentives related to greenhouse gas savings, and a reputable measure of the external benefits which may accrue to society.
- Waste production does not happen in a vacuum and even where a contractor has a wide span of control, other factors (e.g. economic performance) will have a bearing on consumption and the related waste production. Ideally therefore performance contracts should include a mechanism that is designed as far as is possible to normalise outputs to take account of these other changes; for example, indexation related to an appropriate economic indicator such as GDP or per capita disposable income or expenditure, possibly with an additional adjustment for an ongoing waste minimisation effect (if such a trend exists).

Given the constraints of the scope of this project we have only been able to 'scratch the surface' of this complex issue. We envisage that there is likely to be demand from readers of this report for further development of the concepts and discussions contained within and we would recommend that further work might include:

- Development of more detailed guidance on how performance contracts documentation may be structured within the context of the variation of contract and procurement law across Member States;
- Development of a limited number of specific case study examples (possibly utilising ACR+ members as one source of examples);
- Development of website content, hosted by ACR+ and/or EEB or co-hosted on new standalone platform to include:
  - This paper plus copies of presentation and other material from report launch;
  - An enhanced, interactive version of the matrix in the form of a 'decision tree' for municipalities to follow to provide guidance on how to structure performance contracts for the key contract type variants;
  - Links to other useful sources of information.

Contents

1.0 Introduction

1.1 Project Objectives

The overarching aim of this research project jointly commissioned by ACR+ and the European Environmental Bureau (EEB) is to discuss approaches and possible methodologies to implement waste management performance contracts.

Taking this further, there are three main objectives for the work:

- To identify the technical and financial structure of performance contracting for waste management;
- To identify the potential administrative basis, legal basis and governance of these performance contracts; and
- To identify the necessary conditions for such contracts to be established, including an exposition of challenges and solutions for implementation.

1.2 Project Scope

The question of how waste management could be improved across EU Member States through performance contracting Member State is a broad topic. In order to constrain the scope so as to allow a sensible discussion of the main issues, the work concentrates on contracting for municipal waste, defined in the Commission decision of 18 November 2011 (2011/753/EU) as “household waste and similar waste”. The focus is also on municipalities as the main contracting bodies (although the role of Producer Responsibility Organisations (PROs) is also briefly considered), with private sector waste management companies as the main contractors.

Where a municipality does not contract with a third party (including one ‘owned’ by the municipality) for waste management services it is likely to deliver these services on an ‘in-house’ basis (i.e. delivery of the service is carried out and managed by the municipality’s own staff).

Where waste management services are delivered in-house the municipality’s waste management performance is likely to be heavily influenced by the existing incentive landscape (such as avoidance of landfill taxes, or penalties from failing to meet legislative targets for example) when setting service outcome expectations, policies and targets. For this reason the in-house scenario has not been explicitly included within the scope of this work. It is worth noting however that a municipality with such an in-house arrangement might use service level agreements between different departments with independent budgets to introduce an element of structure that can allow aspects of waste performance contracting to be adapted to the situation.

In terms of the scope of waste management activities covered, the main elements of the waste hierarchy are covered i.e. waste prevention, re-use and preparation for re-use, collection for recycling and recovery and disposal.

1.3 Report Structure

The report is structured in such a way as to firstly introduce the project background by way of a short discussion on the overarching policy and legal context for waste management performance contracts (Section2.0), before setting out to define what is meant by 'performance contracting' within the confines of the project (Section 3.0).

Section 4.0 presents the main configurations of waste management contract that Member State municipalities are most likely to be engaged with, in order to identify the main issues that need to be considered when designing in effective performance elements. These generic characteristics for effective performance contracting are then discussed in Section 5.0 before the report concludes in Section 6.0 by bringing together the generic characteristics with a limited number of example contract types to suggest the specific issues and key performance indicators that should be considered.

2.0 Background

2.1 Policy Context

There are many policy initiatives at the EU level which effectively constitute a mandate for the improvement of waste management according to environmental and social objectives. There is also a variety of legislation on public procurement and aspects of contract law which are relevant to the implementation of waste management contracts which contain elements conditional on performance.

There has however up until now been little focus on the role of performance based contracting in encouraging the move to a circular economy model. On this subject, Janez Potočnik, at the time European Commissioner for the Environment, highlighted the potential for procurement to support more sustainable business models saying "We are currently using [public procurement] predominantly for the purposes of lowering prices, but we don't use it as an instrument for change to redirect [our economy]."[2]

2.1.1 EU Policy Initiatives on Resource Efficiency

One of the overarching themes of relevance in the policy landscape is resource efficiency. The consideration of waste as a resource rather than something to be rid of is

[2] MRW 2014. Volume 203 Issue 19. 21 June 2014. Available at: http://www.mrw.co.uk/news/eu-urged-to-integrate-environmental-and-economic-policies/8664200.article?blocktitle=Latest-news&contentID=2186

a key aspect of circular economy thinking. However, although resource efficiency is not an intrinsic component of a circular economy in itself, it is a desirable one. For example, the flow of materials through the economy could be very large relative to its productivity, and this would constitute an inefficient use of resources, yet still satisfy the criteria for a circular economy, i.e. that every output ('waste') be used as an input ('resource'). A circular economy might grow in size in terms of throughput and this will have consequences for resource availability and international competition for resources. This is why it is desirable not only to achieve a circular economy but also a resource efficient one, which uses the least resources possible per unit of output of goods and services.

As far as resource efficiency gains are concerned, treating waste as a resource achieves gains in the following manner. The first type of efficiency gain to be had is in the reduced use of materials (through prevention and reuse): materials can be considered as the embodiment of energy, water, other materials extracted alongside the target material (overburden) and the associated pollutants (including greenhouse gases (GHGs)) involved in their manufacture, so avoiding their use avoids the emissions of these. Similarly, where materials are recycled, the use of secondary materials (i.e. those derived from waste) displaces primary materials, and the embodied impacts described above: the impacts tend to be lower for secondary materials than for primary ones. All these processes reduce the amount of residual waste which requires management. Even here, however, there are opportunities for extracting materials – notably metals and plastics – of a sufficient quality for recycling. Consequently, whilst much focus has been on the efficiency of generation of energy through residual waste treatment (as exemplified by the R1 criterion in the Waste Framework Directive), there are no less important gains to be made, from the perspective of climate change, in seeking to promote the extraction of any remaining recyclables in residual waste.

The Raw Material Initiative (COM 2008/699) aims, amongst several goals, to foster the sustainable supply of materials from within the European Community, as a way of addressing increasing international competition for diminishing natural resources. One source of materials from within the Community is waste, so related goals in the Initiative involve the promotion of resource efficiency and recycling to reduce consumption and import dependence.

The Resource Efficiency Initiative (one of seven flagship initiatives from the Europe 2020 growth strategy) published its strategy document in 2011. This elaborates on the waste and recycling related objectives from the Raw Material Initiative. Using waste as a resource features within the 'Transforming the Economy' theme of the Roadmap (COM 2011/571). It states that the Commission will improve how recycling markets work by the use of economic incentives and developing end-of-waste criteria, the development of best practice in the collection and treatment of waste, and review of EU waste legislation and targets, which is underway. Improvement of statistics and monitoring regarding resource use is also discussed. In its July 2014 communication on circular economy (COM 2014/0398), the European Commission is suggesting a resource productivity target, (as measured by GDP relative to Raw Material Consumption (RMC))

to encourage resource efficiency. Of course a variety of indicators already exist to track progress on using waste as a resource such as the amount of waste generated per capita, percentage of municipal waste recycled and proportion of waste sent to landfill; indicators such as the proportion of secondary material used in the EU compared with primary are in development.

The 7th Environmental Action Programme (2013) reiterates resource efficiency as one of three key objectives. It makes clear that it considers strict adherence to the waste hierarchy a requirement for waste to be used efficiently as a resource.

These policy initiatives all set the stage for a transformation in the economy that involves the utilization of waste as a resource. However although recycling features heavily in these policies, the highest levels of the waste hierarchy, i.e. waste prevention, and preparation for re-use, receive rather less coverage in comparison and in practice; although it is acknowledged that the revised Waste Framework Directive requires Member States to have established (by December 2013) a national waste prevention programme.[3]. One way to improve from existing levels of waste prevention is through the use of economic incentives, and it is in this context that this project on waste performance contracts is to be undertaken.

2.2 Legal Context

2.2.1 Definition of Municipal Waste

The waste performance contracts to be explored by this project will focus on municipal waste as defined in Decision 2011/753/EU, i.e. household waste and waste similar in nature and composition to household waste. In practice this means that regardless of who collects or produces the waste, as long as it is similar in nature and composition to household waste, it is 'municipal' waste. This therefore brings a significant amount of commercial waste into the definition. Whilst contracts involving private sector clients procuring the services of public or private sector providers (for example for refuse collection services) could therefore be included within a discussion of performance contracting, this report will focus on public bodies (e.g. local authorities) as the procuring organisation.

2.2.2 EU Procurement Law

As the prime focus of this project will be scenarios where public authorities engage a private sector entity as a service provider through a contract, the EU public procurement regime will generally apply. The EU is currently in transition between Directives on public procurement, with a new Procurement Directive due for transposition into individual

[3] Links to the various waste prevention programmes published by Members State can be found here: http://scp.eionet.europa.eu/facts/WPP/country_programme_link Last Accessed 13/10/14

Member State law by April 2016. In Member States that are yet to transpose the new Directive, the EU procurement rules are formed by the following legislation:

- Public Procurement Directive 2004/18/EC which covers public works contracts, public supply contracts and public service contracts; and
- Remedies Directive 2007/66/EC.

In contrast with earlier Directives, the 2004 Public Procurement Directive contained specific reference to the possibility of including environmental considerations in the contract award process. An objective was to clarify how contracting authorities *"...may contribute to the protection of the environment and the promotion of sustainable development, whilst ensuring the possibility of obtaining the best value for money for their contracts."*

Further provisions permitted:

- The inclusion of environmental requirements in technical specifications (Article 23(3)b);
- Setting social and environmental conditions for the performance of contracts (Article 26);
- Requiring economic operators to demonstrate they have met their environmental obligations (Article 27);
- Requiring economic operators to demonstrate they can perform a contract in accordance with environmental management measures (Articles 48(2)f and 50); and
- Applying award criteria based on environmental characteristics (Article 53).

The new EU Procurement Directive 2014/23/EU, which repeals Directive 2004/18/EC has similar provisions for environmental performance. It also simplifies some procurement procedures and makes it easier for SMEs and public sector mutuals to compete for tenders. Importantly, it makes the process of making changes to public contracts once they are operational clearer and simpler, albeit within limited boundaries. This is likely to serve to make contracts more flexible in the long term and better able to adapt to changes in technology or external factors such as waste arisings or composition.

Although the EU public procurement regime will generally apply to waste management contracts commissioned by public authorities, a significant proportion of this market is currently served through the use of service concessions. Under these arrangements, the service provider enters into an agreement with the public authority giving it the right to exploit the value that can be recovered through the operation of the services. This generally means that remuneration is primarily through revenues from charging service users directly (for example, for the collection of waste) or through the sale of goods obtained in the provision of the services (for example, recyclable materials). As such, service concessions generally expose the service provider to a greater degree of risk that it will generate the income it anticipates and thereby the risk that it may make a loss on its investment.

One important feature of service concessions is that, until very recently, they have fallen outside of EU public procurement law. As such, it has been possible for public authorities to enter into concession contracts with service providers without having to go through the procedures that are required for public service contracts. Indeed, this exemption from public procurement rules is one of the features that has made service concessions an attractive route for both public authorities and private sector service providers. However, a new Concession Contracts 2014/23/EU was published in January 2014 alongside the new Public Procurement Directive which covers the award of concession contracts including for services such as waste management. This Directive is due to be transposed by Member States by April 2016 and is intended to bring the awarding of concession contracts (including for waste management contracts) broadly into line with those contracts covered by the Public Procurement Directive (although they will remain somewhat more flexible).

Although service concession contracts may become less popular once they are regulated to a similar degree to public service contracts, they will continue to be a part of the public sector waste management landscape. Although there is less of a history of using performance mechanisms in concession contracts, there is no fundamental barrier to applying the same principles and approaches as in envisaged for service contracts. That being said, due to the extent of risk transfer, it is often the case that the approach to service delivery is not precisely specified, giving the service provider greater flexibility to adapt its approach to minimising risk and maximising revenue. This kind of structure can make it more difficult (but not impossible) to introduce performance mechanisms, as the service provider may already be taking a significant risk regarding the certainty of its remuneration and the agreement may give the service provider considerable flexibility in determining how the service is delivered. In situations where, for example, the service provider receives fees for waste collection directly from householders, there can be an incentive to collect more waste, as this leads to a higher turnover. This could conflict directly with the waste hierarchy and undermine the environmental objectives of the public authority and so any performance contract introduced into this scenario would need to incentivise the contractor to follow the waste hierarchy, for example provide for additional payments upon achieving a targeted annual increase in recycling.

Finally, it is of note that where a public body discharges functions itself, as does happen in waste management in many EU Member States; it is exempted from EU procurement rules (the Teckal exemption), which has now been codified into EU law through the 2014 Directive.[4] This applies where:

- The public body controls the service provider in question as if it was that public body's own department; and
- The service provider in question carries out the essential part of its activities with the contracting authority which controls that service provider.

[4] See C*ase C-107/98 Teckal Srl v Comune di Viano, Azienda Gas-Acqua Consorziale di Reggio Emilia*

Where private sector entities engage public or private sector providers, public procurement regulations do not generally apply, but at least in the case of larger private sector 'buyers', many of the same processes and environmental and social objectives will be considerations in the decision to award a waste management contract. For this reason, although not the focus of this report, some of the approaches discussed could be applied to private sector-procured waste management contracts.

There are a variety of different structures of ownership of waste management provision in countries across the EU, with the three main types of scenario as follows:

- Where a public sector organisation, or grouping thereof, procures waste management services from a third-party service provider (either from the private sector or another public sector organisation);
- Where a public sector organisation, or grouping thereof, has in-house service provision i.e. a municipality providing waste management services to itself (especially for collection and civic amenity sites, this remains common in many regions in Europe; however, it also exists for biological treatment of waste and even landfilling or incineration); and
- Where a private sector organisation or citizen procures waste management services from either a private or public sector service provider.

The different ownership structures will have to be taken into account when designing performance based contracts or contract-like arrangements. For the purpose of this report we shall focus on the first and second scenarios, whereby a municipality, or a grouping of municipalities (sometimes referred to as an intermunicipality) contracts a private sector organisation, or another public body, to provide waste management services.[5]

Performance-based contracts are permissible under EU procurement law providing that they are not directly or indirectly discriminatory and are indicated in the contract notice and/or the relevant contract specification(s) and tender documents.

[5] In situations where a local authority provides services to another local authority through a service contract, they are, in effect, a third-party service provider in the same way as a private sector contractor would be, and may have had to compete under the public procurement rules for the contract in the first place. A grey area, which may strictly fall outside Teckal but may apply in many locations across the EU (especially where municipalities are small), is where one local authority delegates the function of meeting a statutory duty or providing a public service to another local authority. These arrangements are often exempt from the public procurement rules as a result of local Member State legislation, essentially following the same principles as Teckal. These situations tend to be less well suited to contractual performance mechanisms.

2.2.3 Contract Law

There are two fundamental principles of contract law that are a feature of the legal code in most EU jurisdictions that are of particular relevance to waste performance contracting.

One is that by definition, a contract must be between two separate entities. If the parties to a contract were actually part of the same entity (such as the same public authority), if one party defaulted on the contract there is in fact no true sanction possible. The entity would be in the paradoxical position of applying a sanction to itself, the net effect of which would be zero. Hence waste performance contracts will work best (and will only exist in a true sense) where the contract is between independent entities. This is not to say that some elements of performance contracting couldn't be applied in such an 'in-house' scenario; but that the agreement could not be as fully featured or effective as a true contract in the legal sense.

A second very important principal here is that in most Member States, it is unenforceable, in contract law, to include *penalty* clauses within the terms of a contract. This is to prevent one party to a contract being exposed to charges *disproportionate* to cost or loss endured by the other party, which would be classed as 'unfair terms'. In practice therefore, incentives of this kind must be proportionate to cost or loss and are framed in terms of *deductions* from the full remuneration agreed, reflecting the cost or loss associated with the failure on the part of the contractor. Within waste performance contracting, this is perfectly adequate in terms of 'negative' incentivisation because the goal of contracting out the service is not to penalize the contractor, but to transfer responsibilities and risks for achieving the objectives of the contracting authority (including those relating to improving the management of waste according to the hierarchy) to the contractor. 'Positive' incentives (e.g. bonus payments for exceeding performance targets) are not generally restricted in contract law, but clearly require detailed consideration from a commercial perspective.

3.0 Performance Contracts

3.1 Definition

It is necessary, in undertaking this work, to be clear about what is meant by 'performance contracts in the waste management sector'.

One area where performance-based contracting is relatively well established is in respect of energy efficiency, where energy performance contracting is defined in Energy Efficiency Directive 2012/27/EU as follows:

"*energy performance contracting' means a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy*

efficiency improvement or other agreed energy performance criterion, such as financial savings".

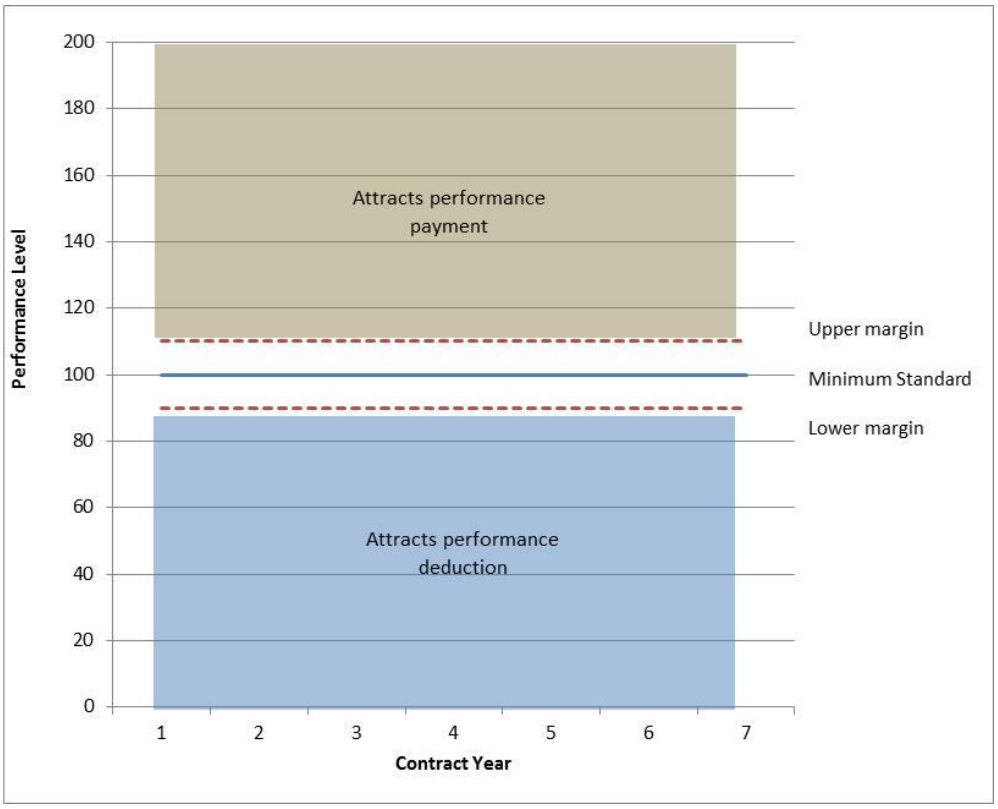
The European Commission Green Procurement guide emphasises that a contracting authority 'can specify that goods are to be supplied or services/works performed in a way that minimises environmental impact, and environmental performance may be linked to penalties or bonuses under the contract. In order to discourage breaches of the environmental commitments, contracting authorities can provide for adequate (proportionate – See Section 2.2.3) sanctions under the contract.'[6]

The distinctive characteristic in the above appears to be that there is a link between the payment received for the provision of goods and services and the level of performance achieved.

In the procurement of waste services, it is expected that services will be specified in some way, albeit with varying degrees of precision. The specification will imply, perhaps even require, a minimum level of performance. Performance levels, therefore, can be established as a basic minimum requirement of the award of a contract to any of the prospective bidders. On top of this, however, contractors can be incentivised to go beyond these basic minimum standards of performance. Additional levels of performance over and beyond contractual minima can be incentivised through mechanisms which encourage the contractor to achieve better performance (Figure 1). In the example in Figure 1, the payment might be linked for example to a specific proportion of the marginal costs or savings of residual waste disposal as measured against a baseline budget. It is these additional levels of performance which are the focus of this work.

[6] European Union, 2011. Buying green! A handbook on green public procurement. 2nd Edition. September 2011. Available at: http://ec.europa.eu/internal_market/publicprocurement/docs/gpp/buying_green_handbook_en.pdf

Figure 1: Performance incentive payments and deductions for performance over or below standard (respectively)



For the purposes of this project therefore we propose the following definition of a performance contract for waste management: that it is a contract for the management of waste that, through the action of a contractually agreed payment mechanism related to defined performance indicators and targets, incentivise the movement of waste management further up the waste hierarchy, and enhances the prospects for improved resource efficiency and the flourishing of a circular economy.

3.2 Examples from other Sectors

3.2.1 Energy Performance Contractor

As previously noted, performance contracting for energy efficiency is well defined and understood within that sector; the Energy Efficiency Directive 2012/27/EU defines it as a contract between the provider and beneficiary of energy efficiency measures where the beneficiaries' investment (the provider's remuneration) is on the basis of "a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings". Verification and monitoring over the term of the contract are necessary for a sound contractual basis.

If energy performance contracting is to provide inspiration for waste performance contracting, it is useful to examine how the concepts compare and contrast.

3.2.1.1 Clients and service providers

In energy performance contracts, each measure, or even multiple measures, will probably have one provider (such as an Energy Service Company or ESCO). It is unlikely that one measure would have multiple providers. In contrast, for waste performance contracts, multiple parties can be involved in the delivery of improvements to one measure of performance; for example, improving recycling rate may involve the actions of multiple parties i.e. those responsible for collecting materials at kerbside, those responsible for collecting materials at civic amenity sites, those collecting bulky waste, those with responsibility for sorting, etc. Increased effectiveness in waste prevention is another area likely to involve the actions of multiple actors, not just on the collection and treatment side, but also for PRO schemes and manufacturers in general..

Also, unlike energy performance contracting, for some aspects of waste management provision, the client and the providers may be one and the same – for example, where a municipality delivers its own waste management services, though this is not the main focus of this report.

3.2.1.2 Definition of performance

Performance for energy performance contracting is measured in terms of the reduction in energy consumption whether in units of energy or financial savings from reduced consumption. Performance for waste performance contracting should be measured by the extent to which waste management activities either coincide with the priorities set out in the waste hierarchy (e.g. % of waste generated per capita that is sent for re-use or preparation for re-use), or lead to improved environmental outcomes (potentially including climate change emissions, which are clearly close related to the system's energy efficiency). Some examples of performance indicators that could be applied to a selection of waste management contract types are suggested in Section 6.0.

3.2.1.3 Setting incentive levels

In energy performance contracting, the relationship between energy efficiency and financial savings is straightforward, the latter being a direct consequence of the former, and this provides a useful metric both to monitor performance but also to suggest the level of remuneration necessary for the provision of energy efficiency measures. The remuneration should be a proportion of total savings, to provide appropriate incentives. As regards waste, the situation is more complex. If a parallel is made between energy consumed and weight of refuse as metrics of performance, for waste, weight based measures are only informative if they are disaggregated by end destination by level of the waste hierarchy and they are at their most informative if they are also disaggregated by material type. Additionally, existing price signals for waste management do not always correlate as they should with the desired end destination for different material types. For example, in the absence of landfill taxes, or bans that demand alternative forms of waste treatment, the costs of separate collection and sorting of materials may still be higher than the costs of collecting materials as residual waste and landfilling the material.

3.2.1.4 Structuring payments

There are different ways that financing is applied to energy performance contracting – one model is that the ESCO (provider) obtains financing for the upfront costs necessary, and this means that beneficiaries do not face the barrier of prohibitive upfront costs; however in some cases, if the provider is able to carry debt, they will obtain financing and repay the loan using savings that are guaranteed by the contract. In the case of waste performance contracting – both these models (i.e. the contractor obtains finance for upfront costs (e.g. vehicles, treatment infrastructure) and recovers this investment through the life of the contract, or the municipality obtains finance for up-front costs and makes the associated infrastructure/resources etc available to the contractor) may be viable depending on the circumstances of public authorities.

In conclusion, although Energy Performance Contracting and Waste Performance Contracting share some conceptual elements, in practice, the complexities of the latter are greater and need extensive feasibility assessment.

3.2.2 Other Sectors

A research exercise to identify other publications examining the issue of performance contracting in waste management has revealed little in the way of publically-available guidance for contracting authorities. Performance contracts are however increasingly commonly referred to as mechanisms to facilitate innovation in public procurement and the procurement of goods and services with a reduced environmental impact. The two publications noted below provide a number of case studies of contracts from other sectors (e.g. cleaning services, building, vehicles, office consumables) which include performance elements:

- Procurement of Innovation Platform: Guidance for public authorities on Public Procurement of Innovation. Available at: https://www.innovation-procurement.org/fileadmin/editor-content/Guides/PPI-Platform_Guide_new-final_download.pdf
- European Union: Buying green! A handbook on green public procurement. 2nd Edition. September 2011. Available at: http://ec.europa.eu/internal_market/publicprocurement/docs/gpp/buying_green_handbook_en.pdf

In addition readers may find the World Bank resources on “Public private partnerships in waste management”, a useful additional source of reference. This resource available at: http://ppp.worldbank.org/public-private-partnership/sector/solid-waste includes references to performance contracting, incentives and some case studies and sample contracts from Latin America and Asia.

4.0 Waste Management Contract Variants

Municipalities across Europe have responsibilities for delivering a variety of waste management services. In many countries, the delivery of some, or all, of the services is undertaken by the municipality itself, or a public company linked to the municipality. In cases where services are contracted out, the contracts which are let may cover a range of different services. For example, in some municipalities, there may be a single, integrated contract which is designed to cover all the services for which the municipality is responsible, whereas another municipality may let a variety of different contracts (in a variety of combinations) for, for example:

1) Door-to-door (kerbside) waste collection;
2) Collection of bulky waste from households;
3) Operation of container parks / Civic Amenity (CA) sites;
4) Collection of street sweepings;
5) Biological treatment of organic waste;
6) Recycling of specified waste streams (e.g. separately collected paper and cardboard or plastic);
7) Treatment of residual waste; and
8) Landfilling.

Municipalities may also collaborate on some contracts to make these more attractive to bidders and to benefit from economies of scale in their delivery. Furthermore, it is well known that in some countries, as well as the collection of household waste, municipalities may undertake, or be responsible for, the collection of a variable quantity of non-household waste. This may be collected on separate rounds, and sometimes, specific vehicles, or in other cases, the collections may take place as part of the household waste collection rounds.

This variety of approaches poses some problems for a very general exposition of how performance contracts should be designed since it is clear that contractors may have responsibility for varying parts of the overall waste management system. In principle, it would be attractive to develop an approach which enables municipalities to use this work as a form of manual to help consider every possible configuration. In practice, we felt (having set out with this objective in mind, and reflected on the issues which arose) this might lead to a level of generalisation and abstraction which was unhelpful.

Consequently, we felt it better to consider a range of ‘contract scopes’ which seemed to reflect the prevailing practice in the letting of contracts to waste management operators across Europe. It was felt that this would allow the issues raised in performance contracting (see Section 5.0) to be considered in specific scenarios (see Section 6.0).

The choice of contract variants is set out below. First, we set out each contract type in what we believe to be its simplest form before then considering a variety of scopes under which more than one of the simpler forms is let as an integrated single contract.

4.1 Communications

Contracts for communications with households (for example to encourage the adoption of behaviours that lead to increased levels of recycling such as increase separation of materials in the home) may be let separately or may be part of collection contracts. Typically, where they are part of a waste collection contract, the responsibility will rest with the entity which is undertaking the waste and/or recycling collections. In some countries communications also comes under the auspices of the respective Producer Responsibility Organisation (PRO), either where the PRO directly funds but doesn't deliver (itself or via a third part contract) the collection service or where it is responsible for delivery as well as funding.

We have not included an example communications contract (where these are let in isolation) within the examples in Section 6.0. The reason for this is that the focus in this work is on the movement of waste up the hierarchy; because the links between communications and this type of impact are difficult to establish conclusively, then where the communications function is contracted out independently of other services, it is difficult to set performance contracts given the absence of a clear counterfactual.

4.2 Waste Prevention

Stand-alone contracts for waste prevention are in our experience relatively rare; some municipalities may let contracts for certain aspects of waste prevention, such as the provision of home composting services, door-to-door communications activity to advice on food waste prevention or the provision of real nappy laundering services, but these are often as part of 'bundled' contracts linked with for example refuse or recycling collection services. Indeed, this may be a shortcoming of existing contracting approaches. Whilst we have not therefore included an example of a standalone 'waste prevention contract' within the examples discussed in Section 6.0, performance incentives related to waste prevention aspects are included in various forms within the discussion on incentives within Section 5.0 and in other contract examples in Section 6.0.

Were a specific contract to be let for 'waste prevention', one can imagine two different cases of contract:

- In the first, which might be the case where a contract is set for specific initiatives, it might be expected that the performance incentives are closely related to the scope of services being provided. In this case, the measures could be 'input based' (e.g., number of home visits to advise on food waste prevention, or number of home composting bins issued) or 'activity based' (e.g. number of home composting bins issued and used), or they might be related to the quantitative effect of the measures themselves. The latter might be difficult to measure where the initiative is targeted and discrete, and where the measure is not expected to have a large impact on the total level of arisings. In these cases,

proxy measures of performance are likely to be necessary, and these are likely to be based on the input type measures mentioned above (so the quantitative measures may simply be derivatives of these). Measurement of performance against the counterfactual is also unlikely to be straightforward;

- In the second, the municipality could simply consider performance related measures. This type of approach is likely to require – for it to be justified – an approach akin to payment by results, with the contractor being paid from avoided disposal costs. On the other hand, because the payment is likely to be strongly tied to performance, measurement of the performance level - in such a way that performance can be attributed to the contractor's activity - becomes crucial.

Because of the inherent time-lag between cause and effect and the difficulty of even establishing cause and effect in the first place, the former scenario would be recommended ahead of the latter for a stand-alone waste prevention contract.

4.3 Re-Use and Preparation for Re-Use

Municipalities in some Member States do enter into separate contracts for re-use and preparation for re-use activities. In our experience however it is more common for these services to be incorporated within contracts for the management of Civic Amenity (CA) sites or the collection of bulky waste from households, rather than as discreet standalone contracts. In some Member States, the social sector and specific employment programmes play an important role in the re-use of bulky waste. Often, the contract is not a result of tendering on the open market, but is based on specific cooperation on social employment and reuse. Where such contracts for preparation for re-use are let, we would expect this to be done on the basis that the scope is limited to those materials that have already been identified as being suitable for such treatment. This is by no means straightforward as the market for these goods can change quickly. Without suitable performance incentives contractors can lose focus on reuse in favour of waste fractions with a positive value on the recycling market. In order to overcome this, and keep a strong focus on reusability, some municipalities pay a fee for the services of reuse centers based on the quantities of materials that have been sold in reuse shops. In some of these cases, municipalities only pay a fixed rate per inhabitant, so that the reuse shops do not have an incentive to collect 'as much waste as possible', but focus on goods that are genuinely suitable for reuse.

The sector for these services is generally still relatively un-developed (compared to collection and treatment sectors) and dominated by numerous small independent organisations, often charitable and social enterprises. There are some limited examples emerging (for example in Belgium) where private sector contractors are moving into this market.[7] There is some contracting that takes place for waste collection that

[7] For one such example see: www.troc.com

incorporates a re-use and/or preparation for re-use element, often sub-contracted by larger waste management companies to the aforementioned small specialist organisations.

4.4 Waste Collection

On waste collection, there are a range of different types of system operating across Europe. We have attempted to present the most common types of system in a set of broad categories outlined below.

4.4.1 Conventional Household Collection Schemes

The main differences across Member States in respect of household waste collections relate to the extent to which schemes, particularly recycling schemes, rely upon:

1) Collection via on-road communal containers; and
2) Collection via door-to-door / kerbside collections.

There is also a configuration which we have described later in this section as the 'Hybrid', in which there is kerbside collection for refuse, but the recycling schemes are operated through on-road communal containers.

An alternative hybrid approach has the reverse arrangement whereby recyclables are collected at the kerbside, and where the residual waste is only collected through underground/on-road containers ('reversed collection').

The opportunities for moving waste up the hierarchy in these types of scheme might not be the same, and so given the significance of this aspect of the service, the decision was taken to consider each of the on-road container (RC), Hybrid and kerbside (KS) schemes for household waste collection.

Another variant in the nature and potential of waste collection schemes is the extent to which the recycling schemes are controlled by producer responsibility organisations (PROs). In this respect, the following variants exist:

1) PROs have no direct role in the collection system;
2) PROs fund the schemes, but are not, themselves, procurers of the schemes;
3) PROs fund the schemes and are involved in setting up the service based on negotiations with the relevant municipalities;
4) PROs both fund, and are responsible for procuring and operating, the schemes.

The first two of these variants are broadly equivalent from the perspective of how performance contracts might be configured. The fourth, however, raises questions as to how performance in recycling can be enhanced by municipalities if the responsibility for recycling services rests with the PRO scheme(s). This becomes slightly more complicated when one considers that in different countries, PRO schemes have moved, to varying degrees, into the collection of materials outside the scope of producer responsibility. So, for example, the issue as to whether to collect newspapers and magazines, or non-packaging plastics, might influence the desirability of the municipality offering a separate

service to those operated by the PRO. So as to keep things simple, we have assumed the PRO concerned takes on the role of collecting all the major dry recyclable materials. Therefore we have not included further consideration of the variant under which the PRO has direct control and responsibility for the collection of dry recycling since in this circumstance the municipality (the main audience for this work) has no contractual relationship or direct influence over the performance of this service. That being said, the discussion that follows is still potentially of relevant for PROs in setting performance standards for the contracts that they may place for the collection of dry recycling.

Consequently, we have considered the following approaches to contracting collection services:

1) KS (kerbside) schemes:
    a. No direct role of PRO:
        i. Contracts for refuse collection only;
        ii. Contracts for refuse and dry recycling collections (no biowaste);
        iii. Contracts for refuse, dry recycling and biowaste.
    b. PRO has direct role:
        i. Contracts for refuse collection only;
        ii. Contracts for refuse and biowaste.
2) RC (road containers) scheme:
    a. No direct role of PRO:
        i. Contracts for refuse collection only;
        ii. Contracts for refuse and dry recycling collections (no biowaste);
        iii. Contracts for refuse, dry recycling and biowaste.
    b. PRO has direct role:
        i. Contracts for refuse collection only;
        ii. Contracts for refuse and biowaste.
3) Hybrid scheme:
    a. No direct role of PRO:
        i. Contracts for refuse collection only;
        ii. Contracts for refuse and dry recycling collections (no biowaste);
        iii. Contracts for refuse, dry recycling and biowaste.
    b. PRO has direct role:
        i. Contracts for refuse collection only:
        ii. Contracts for refuse and biowaste.

Note that we have approached these variants in the order outlined above since we believe most of the issues raised by the hybrid scheme will have already been discussed in referring to the KS and RC schemes.

It is recognised that for many KS contracts, there may be aspects of the service, or support for the principle KS service that are delivered through RC schemes. For example, some well-performing KS schemes rely on RCs for the collection of, typically, glass and / or paper and card. The main emphasis in the discussion assumes, however, that the KS schemes collect the majority of the relevant wastes through the KS services.

4.4.2 Treatment of Non-household Waste

It is well known that different European Member States – and different municipalities within some Member States – collect varying quantities of non-household waste as part of 'municipal waste'. The significance of this lies in respect of setting performance incentives which can be meaningfully measured and tracked over the life of a contract, and in such a way that changes in performance are not simply spurious measures of changes in the quantity of non-household waste collected. Assuming that a contract covers a defined number of households, then in principle, this allows for some measurement of performance as long as the quantity of household waste can be clearly identified.

There are differing implications of this across the types of collection scheme, and we pass comment on these in considering the collection types. From the perspective of performance incentives in contracts, what is important is that either the quantities of non-household waste being collected can be clearly understood, or the premises from which they are collecting is clearly defined, and (for some indicators) that it is held constant over the period of the contract.

For the time being, we note the following:

1) KS schemes
   In these schemes, the question becomes one of whether or not the non-household waste is collected on separate rounds, and if not, whether the non-household waste is, for example, weighed, or how the collected quantities are otherwise assessed;

2) Hybrid
   Here, the same applies for refuse where this is collected at the kerbside as for the KS schemes. For RC schemes for recycling, however, it appears difficult – other than in exceptional cases (locked areas with keys or tags for residents, for example, or where businesses are required by law to use other services, or where, for newer types of underground containers the user is required to identify him/herself via a tag and the system assesses the quantity of waste deposited) – to understand the quantity of non-household waste relative to household waste.

3) RC schemes
   As indicated above for hybrid schemes, it is very difficult to identify household and non-household fractions being collected. Indeed, some Member States

report very little waste other than that from households as 'municipal waste' to Eurostat precisely because it is not possible to identify the household stream separately from other wastes collected as part of the same service.

Where the collection system design in place allows for a clear distinction to be made between the collection of household and non-household waste, then the same (or similar) performance contract indicators can be applied to each type of collection on a comparable basis (assuming that the objective in terms of improving the management of both types of waste is the same).

4.4.3 Container Parks/Civic Amenity (CA) Sites

Contracts for the management of waste delivered to container parks (bring sites), or Civic Amenity (CA) sites (known in some countries as household waste recycling centres), can be let separately from the contracts for running the main household waste collection activity. Where they are, the implications for performance contracting (as well as waste flows) may be different from those circumstances where the management of these sites is integrated with household collection. This is because a 'squeeze' on the regular household collection may lead to an increase in waste delivered to them (and vice versa).

We have considered the case where contracts are let for the management of container parks and for CA sites separately. Although in practice municipalities will sometimes enter into separate contracts for different waste streams (for example for textiles, oil, car batteries etc.) for the purposes of this report we have assumed that the type of contract considered here are for the management of all waste delivered to the site.

4.4.4 Bulky Waste Collections

As with contracts for container parks, bulky waste collection services may also be operated under separate contracts, or integrated with other aspects of the collection services within a single contract.

We have considered the case where contracts are let for the collection of bulky waste. We assume that these are for the management of all waste collected under such schemes.

4.4.5 Street Sweepings

Contracts for the collection of street sweepings may also be let separately. Due to the level of control which the contractor has over littering behaviour, setting performance contracts that incentivise the management of waste collected further up the hierarchy is challenging but not impossible. Performance indicators that attract a payment bonus or deduction can be aligned with cleanliness standards, usually assessed by regular surveying against set standards but it is also possible to establish indicators that relate to the level of separation and recycling of waste types and the overall levels of waste collected. Contractors that are given control as part of the contract over the design and positioning of on-street litter bins can affect the quantity and degree of separation of

waste materials which can be apportioned environmental and financial (where recycling is cheaper than disposal) benefits.

4.5 Treatment

For most of the common individual treatments, whether these be sorting plants, composting facilities, anaerobic digestion (AD) facilities, mechanical biological treatment (MBT) facilities or incinerators, contracts may be let for the treatment itself. Where a collection contract, which leads to the need to sort materials, is being let, it may make sense for the collection and sorting contract to be let as one (see below), but cases will exist where the two contracts are let separately, and also, cases may exist where a municipality undertakes collection and lets a separate contract for the sorting of materials which it has collected.

There is a distinction to be drawn, where treatment is concerned, between the situation where the contract being let by the municipality is for design and build only (DB), or design, build and finance (DBF) only, and those where the contract being let includes the operation of the facility (DBFO). In the DB and DBF cases, the contractor is not required to operate the facility, so the municipality takes on a greater level of risk in terms of its performance. Indeed, care has to be taken to ensure the design is fit for purpose, and is capable of doing what the municipality expects it to. In these cases, because there is probably a need to understand the design before the contract commences, it might be expected that once the contract has been signed, there is less that the contractor can be held responsible for in terms of performance. There will be possibilities, of course, to ensure that there is recourse to the contractor if there are major failures that can be traced to the DB elements of the facility (subject to the facility being operated as was intended). It might also be stated that if a separate contractor is identified for the operational phase, then there will clearly be limits to what can be done in respect of performance once the facility has already been built, and the operator might not always be well placed, from the outset, to understand what limitations the DB elements place on its ability to specify performance.

In the case of DBFO contracts, performance incentives are easier to specify since the contractor has responsibility for all aspects that affect performance. For most facilities, performance has little meaning in the abstract, independent of a facility's operation. The integration of all DBFO elements lends itself, therefore, to a more interesting structure of performance incentives.

As a result, within the discussion of contract characteristics in Section 5.0 we have considered contracts for:

1) Sorting plants;
2) Compost facilities;
3) AD facilities;
4) MBT facilities; and
5) Incineration (and other thermal treatment) plants.

Landfill-only contracts have not been considered here since it is difficult for the landfill operator to have any control or influence over the amount of refuse delivered to it.

4.6 Forms of Integrated Contracts

As well as the above 'simpler forms' of contract, it is not uncommon for more than one of the services considered in isolation above to be let under a single contract. Some of the contract types believed to be more common are set out below. It is not the intention to cover all permutations, more to ensure that all the relevant principles are raised through the consideration of a range of contract scopes.

4.6.1 Main Household Collection plus Sorting[8]

The extent to which collection systems rely upon sorting depends upon the nature of that system (for example is it separately collected, twin stream e.g. fibres and metals/plastics, or fully comingled), so it may be common for collection contracts to be let with the necessary sorting included within the scope of services being provided.

4.6.2 Main Household Collection plus Sorting plus Container Parks

In this situation, contractors have control over wastes discarded through different routes which have the potential to exhibit some interactions. As a result, the extent of control over the waste stream as a whole may increase.

4.6.3 Main Household Collection plus Sorting plus Container Parks plus Bulky Waste

There may be some interactions between the bulky waste collection route and the extent to which households make use of container parks, or indeed, their regular household collection. The inclusion of this stream further increases the extent to which the contractor exerts control across the whole waste stream.

4.6.4 All Collection plus Sorting plus Treatment of Separately Collected Biowaste

In this case (i.e. as per 4.6.3 plus biowaste), the contractor would have control over the collection and sorting of waste, as well as the treatment of separately collected biowaste. This gives the contractor greater control over the inputs to sorting and biowaste treatment, which in turn, can be expected to have implications for the quality of the outputs sent from those facilities to end-use markets.

[8] The term 'Main Household' is used in this section to mean the main doo-to-door collection from households or household bring services, i.e. non-household collection excluded.

4.6.5 All Collection, All Treatment and All Disposal

In this case, the complete service is bundled into one integrated contract. Typically, a number of different sub-contractor companies may be involved in delivery of the contract under one lead company.

One of the potential issues in letting multi-service integrated contracts is that, depending on how the contract is let, it favours larger multi-service and often as a result multi-national bidders at the expense of smaller, more local Small and Medium-Sized Enterprises (SMEs). This can be at odds with an objective for a municipality to support local economic development through SMEs which, although not an issue restricted to performance contracts per se, can be ameliorated by reviewing the division of a contract that may be procured as a bundle but is made up of a number or different lots or by introducing an element into the procurement evaluation that favours the involvement of SMEs as sub-contractors.

Another potential risk of integrated contracts is related to duration; where the contract includes specific treatment or disposal solutions that are dependent on investment in infrastructure requiring a long payback period, the contract duration is often similarly long, for example 20 years or longer for some contracts including residual waste treatment in energy from waste facilities. Such lengthy contracts where they also include services like collection, where the pace of change of collection methods, technology, policy etc tends to change over a shorter time span, can prevent the municipality from benefiting from this compared to contracts with a shorter duration. In such situations, contract changes can still be negotiated (provided that these are in line with public procurement regulations) but this is often not as economically favourable as re-procuring on a more frequent timescale.

Whilst integrated contracts could conceivably make it easier to establish an effective performance management element from the perspective of the contractor's span of control over the inputs and outputs of the whole system, the other risks and issues with these types of contracts discussed above need to be part of the decision-making process when they are being considered.

4.7 Summary

There is no single reference point for the nature and scope of contracts which are let for management of waste across the 28 countries of the EU. In the absence of this, we have sought to consider a range of contract scopes which we believe to be generally representative of existing practice. Not all contracts types and scopes are covered. However, we believe the variants introduced in this section are sufficient to provide municipalities with a set of generic examples that will allow for a discussion of the main characteristics of performance contracts (Section 5.0) and the presentation of a set of performance contract scenarios (Section 6.0) that can act as guidance for municipalities when considering the introduction of new contracts or improvement to existing contracts with the aim of incentivising the management of waste further up the hierarchy.

5.0 Contract Characteristics

In this section, the main characteristics of or conditions for effective performance contracts for waste management are discussed. In the following Section 6.0, these generic features are addressed by giving a set of suggested examples for each of the contract variants identified in Section 4.0 above.

5.1 Degree of Control

The variation in waste management contract scope has been discussed in Section 4.0 in so far as scope is related to the type of collection, treatment and disposal services being contracted for, and the role of the main actors concerned (i.e. waste producers, contracting entities, service supplier organisations etc.).

However, another important consideration is how the scope of the contract relates to the degree of control which the contractor could reasonably be said to exercise over waste generation, the extent of preparation for reuse, the amount of recycling, and the end destinations to which waste is sent. By way of a crude and extreme example, a contract awarded by a municipality to a contractor solely for the treatment of household refuse in an Energy from Waste (EfW) facility does not allow for that contractor to take action on waste prevention. In this example, it makes no sense to include performance incentives within the contract aimed at reducing the quantity of municipal waste since the contractor has no control over this. On the other hand, a municipality could contract out the construction of a waste treatment plant, and agree on specific financial measures for the use of any free capacity that is created in the plant through reduction of household waste.

Alternatively, where a contract is awarded for the collection of household refuse and recycling, and where communications with householders regarding the use of the service (for example, what materials are accepted for recycling, how householders can reduce the generation of refuse etc.) is included in the contract, provided effective performance incentives are set, then it is reasonable to expect that action by the contractor – both in respect of the quality of service, and the way the service is communicated – could influence the proportion of waste that is recycled. In such circumstances care would need to be taken in setting the service payment terms that the collector of waste does not suffer from, or is at least compensated via compensatory payment for a reduction in the quantity of waste collected. This is straightforward to do, providing that the municipality is able to pass on to the contractor (at least a proportion of) the financial benefit of lower disposal costs.

The latter scenario is easier to achieve where contracts are limited to a single service provider, and where contract incentives are included that transfer the responsibility and risk related to moving waste management up the hierarchy to that single contractor. The point is that this is only effective where the contract scope and contract performance mechanism are aligned, i.e., where the performance indicator being used (the output) is clearly defined and the contractor controls most, or all, of the key factors (the inputs) determining that output. In other words, factors influencing the performance measure

have to be within the contract scope. Incentives which relate to matters over which the contractor has no control will not, for obvious reasons, be effective, and poses risks to both parties: if waste quantities rise or fall in the context of a contract for incineration, then if performance incentives were in place related to waste quantities, either the contractor loses, or the municipality loses, for reasons that are, essentially, spurious from the perspective of the specific contract.

Put another way, the scope of the contract and the scope of the performance mechanism, in basic terms, must match up, reflecting how the market works (i.e. the scope of each entity/contractor's services) in different countries. Where this is not already the case this can be achieved by the transferral of risks and responsibilities for activities outside of the contractor's scope to that contractor, hence bringing the scope of the contract and the scope of the performance mechanism in line.

An example of the transfer approach is as follows. A waste collection contractor could face deductions in proportion to the cost per tonne of disposal over a certain threshold determined by the client. So, if the collection contractor had control over the collection and processing of waste and made decisions that resulted in an increase in landfilling, which would incur additional expense for the public authority paying *another* contractor for landfill services, the collection contractor would face some, or all, of the consequences of that in terms of a deduction in their remuneration.

5.2 Application of Performance Contracts

A potential risk to be aware of when making certain performance levels contractual, even where the contractor has, in theory, the requisite span of control, is where the nature of the improvement measures required to achieve that level of performance is opposed by other stakeholders such as political stakeholders or residents; for example, opposition to a particular form of treatment technology or collection system design. This type of risk may be most likely to arise where contracts are concluded in advance of the requisite infrastructure being developed.

In most public procurement procedures, the municipality will usually define from the beginning in detail:

- Service specification / technical requirements;
- Service targets (including those related to environmental performance;
- Contract management procedures.

There is a clear mechanism within the tender and contract documentation for the incorporation of performance management clauses. This may not be as clear-cut for service concessions however; here the contractor is likely to be granted more freedom regarding how services are delivered, including in some cases the ability to receive service fees directly from the users of the service. Where these fees are directly related, for example, to the quantity of residual waste collected, there is little incentive for the contractor to work to reduce the amount of this waste collected. On this basis we

believe that environmental performance indicators will be more difficult (but not impossible) to integrate in service concessions and their use will be less flexible.

Even where performance levels are clearly established and agreed to before the contract is signed, in practice where these levels are not reached it can be a difficult, lengthy and time-consuming process to apply contractual default payments; contractors can and do dispute the legal status of default payments and disagreements between contracting parties can result in long and costly legal debates. This is all the more reason why it is important for municipalities to apply a 'reasonableness' test before incorporating performance-related payment mechanisms into contracts to check that the performance levels set could be expected to be achieved with a reasonable application of effort and investment by the contractor and that it is within the contractor's span of control, and that municipalities are suitably confident that they are legally enforceable.

5.3 Measuring Performance

'Performance', in the context of waste performance contracting can be measured in two different ways. One way is by measuring outcomes; in the context of this report we would be looking to measure outcomes according to the extent to which the waste hierarchy is respected (for example, through some measurement of waste generated, or of recycling rates), or alternatively other environmental outcomes such as energy use, energy generation, greenhouse gas emissions or air quality. The other is by using measures that more traditionally relate to questions of service 'quality'. If there is at least a qualitatively characterized relationship between the service quality and the expected outcomes in terms of the waste hierarchy, then quantitative process indicators of service quality can provide useful mechanisms for performance monitoring - for example, for a recycling collection contract, measuring the instances of non-collection for reasons of contrary materials being set-out by the resident could be used as a proxy for the success (or otherwise) of the recycling service.

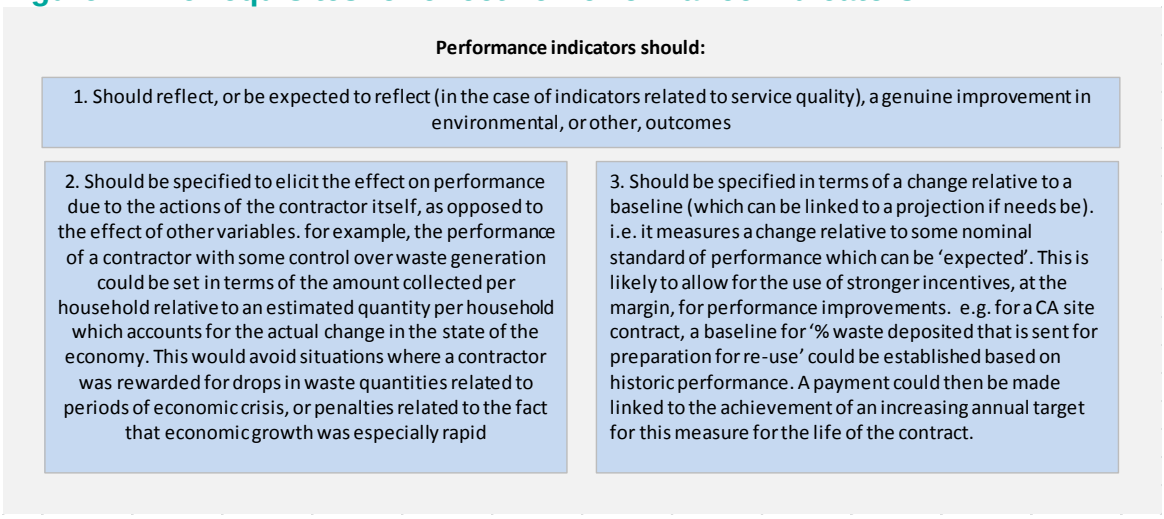
The most appropriate indicators will depend on the scope of the contract (see Section 5.1) and what type of performance is being incentivised. Using the waste hierarchy as the main focus, we have identified a number of suggested performance indicators which could be considered depending on the level of the hierarchy at which the contract is most closely aligned (see Table 1). All of the indicators identified in this table would require a well-specified baseline, and regular and robust data monitoring in order to be effective. As discussed earlier this baseline could be set by the contracting authority, in which case, it seems desirable that these should be included within the contract specification(s) quoted during the procurement process, or developed in conjunction with the contractor, for example, following an initial period of monitoring (e.g. the first contract year).

The list in Table 1 is not a comprehensive one. Some principles will be worth bearing in mind when seeking to establish such indicators (Figure 2):

1. Evidently, the indicator should reflect, or be expected to reflect (in the case of indicators related to service quality), a genuine improvement in environmental, or other, outcomes;

2. The indicator should be specified, as far as possible, in ways that seek to elicit the effect on performance due to the actions of the contractor itself, as opposed to the effect of other variables. For example, waste might be expected to be linked to the number of households in an area, or to the state of the economy and its impact on consumption of goods and services. In the ideal world, indicators are specified so that they 'allow for' changes in household numbers, or in the state of the economy. So, for example, the performance of a contractor with some control over waste generation could be set in terms of the amount collected per household relative to an estimated quantity per household which accounts for the actual change in the state of the economy. This would avoid situations where a contractor was rewarded for drops in waste quantities related to periods of economic crisis, or penalties related to the fact that economic growth was especially rapid;
3. The performance measure is ideally specified in terms of a change relative to a baseline (which can be linked to a projection if needs be). In other words, it measures a change relative to some nominal standard of performance which can be 'expected'. This is likely to allow for the use of stronger incentives, at the margin, for performance improvements. For example, For a CA site contract, a baseline for '% waste deposited that is sent for preparation for re-use' could be established based on historic performance. A payment could then be made linked to the achievement of an increasing annual target for this measure for the life of the contract.

Figure 2: Pre-requisites for effective Performance Indicators



The list of indicators outlined below, therefore, should be taken as indicative rather than as a comprehensive list.

Table 1: Example Performance Indicators

Reference	Hierarchy Level	Performance Indicator	Key Considerations
1a	Prevention	(Change in) total quantity of household waste collected/treated – per person/household	Requires a good understanding of how measures can influence the movement of waste into different collection routes. For a contract covering multiple waste streams, quantity of each stream could be calculated separately and then summed to monitor movement of waste between streams/routes. Performance over time could, where possible, be measured relative to a projection, linked to the state of the economy e.g. indexed to Gross Domestic Product (GDP). A suitable basis for agreeing the figures for households / population would be required. Would need to be able to clearly distinguish between household and non-household waste where these two streams are collected together by the contractor.
1b		Number of home composting containers issued.	Measuring how many are issued is relatively straightforward; it is arguably much harder to establish whether containers are being actively, and well, utilised. To do so is likely to require additional expenditure on communication activity and post-delivery surveying. If the contractor is to meet costs of this monitoring this would need to be taken into account when setting incentive payment levels. It would be expected that an increase in the performance level for this indicator could be negatively correlated to the quantity of separately collected biowaste and the quantity of biowaste surveyed as being present within the residual waste fraction. The latter two indicators could therefore be used in conjunction with number of home composting containers issued.
1c		(Change in) residual waste per person/household.	This measure takes into account efforts in both recycling and waste prevention. This measure might be effective in taking account of movement of waste from one stream to another as a result of actions in one part of the collection service (for example, waste prevention measures, such as pay as you throw, can lead of waste moving from door-to-door collections into container parks / CA sites.

1d		Behavioural Change based indicators – e.g. stated purchasing behaviours related to avoidance of food waste, attitudes towards packaging etc.	These types of indicators, whilst potentially informative are very difficult to use in a contractual situation. Any indicators would need to be set following a baseline survey with indicators relating to clear waste prevention behaviours. The main challenge in using surveys to establish and monitor against performance indicators is ensuring comparability of survey results over time and establishing a clear link between contractor's actions and a change in attitudes/behaviours.
2a	Re-use / Preparation for Re-use	(Change in) proportion/value of material that is prepared for reuse.	In order to set targets that are 'fair' it will be important to establish and agree with the contractor which materials collected are appropriate for being sent for preparation for re-use; the collection system used may have a bearing on this.
2b		(Change in) proportion/value of material sold or donated for reuse.	Possibly relevant for shops at CA sites. Will only be reuse (as opposed to preparation for reuse) if the material has not been discarded. It might be difficult to argue that anything under a 'waste management' contract is reuse as opposed to preparation for reuse. i.e. Bulky waste collected and not sent for treatment or disposal likely to be classed as preparation for re-use.
3a	Recycling and Biowaste Treatment	(Change in) proportion / quantity *collected* for recycling.	The 'collected for recycling' indicator suffers from the fact that it might not be sufficiently sensitive to quality (and may, as a result, lead to perverse incentives for the contractor to collect more material, but of lower quality). It can however be used in conjunction with other complementary indicators such as for example 3b-3d below or a service measure such as the number of collections rejected for reasons of contamination.
3b		(Change in) proportion / quantity *sent* for recycling.	Clear definitions will be required of what constitutes 'recycling' and possibly, there may also be a need to specify acceptable destinations for the various waste types collected (so as to ensure that quality is not undermined). For recycling sorting contracts this would be related to the quantity of material that is *accepted* by the sorting facility.
3c		(Change in) proportion / quantity recycled	Clear definitions required to establish the point at which the material can be said to be recycled. This would require collaboration of actors along the supply chain to establish accurate figures. For recycling sorting contracts this would be related to the quantity of material that is *accepted* by the sorting facility.

3d		(Change in) proportion / quantity of recycling that is rejected.	Clear definition required of 'rejection'. Potentially difficult and costly to monitor as could involve supply chain and/or sub-contractors which would need to be involved in monitoring regime for the indicator to be effective. The relevance needs to be considered in the context of whether collection, or sorting, or both, are included in a contract. Providing a robust surveying and reporting regime is in place, historical performance can be used as a means to set a benchmark for setting new performance levels for a new contract.
3e		Value of material recycled per tonne of input (relative to a weighted index value)	This would be applicable for a recycling sorting contract where the intention would be to incentivise the recycling of material with a higher net environmental benefit. Caution is required however since value is not always a good proxy for environmental performance. An example: wood waste has a higher value on the market for renewable energy than on the recycling market. However, from an environmental point of view, the use of wood waste as resource rather than a fuel should always get a higher priority.
3f		(Change in) proportion / quantity *collected* for composting/ digestion.	Clear definitions will be required. The relevance needs to be considered in the context of whether collection, or both collection and biowaste treatment, are included in a contract. It may be preferable however to incentivise for increased home composting, however where the aim is to reduce the quantity of biowaste collected within the residual stream, then this is a useful indicator.
3g		(Change in) proportion / quantity *sent* for composting/ digestion.	Clear definitions will be required and possibly also specify acceptable destinations for the various waste types collected. The relevance needs to be considered in the context of whether collection, or both collection and biowaste treatment, are included in a contract.
3h		(Change in) proportion / quantity composted / digested	Clear definitions required to establish the point at which the material can be said to be composted/ digested. The relevance needs to be considered in the context of whether collection, or both collection and biowaste treatment, are included in a contract. This indicator is most relevant if the collected material is always destined for the same treatment with a constantly applied input specification.
3i		(Change in) proportion collected for recycling / composting / digestion that is rejected.	This indicator is most relevant if the collected material is always destined for the same sorting or composting / digestion process with a constantly applied input specification.

3j		Distance waste transported per tonne, on average or total per year (weighted average).	This indicator would be designed to incentivise a minimisation in transport but would need to be applied in conjunction with another indicator (e.g. an overall GHG indicator) regarding end fates to ensure that higher environmental cost treatments where not preferred by the contractor because they happen to involve shorter transport distances.
3k		Carbon based metric related to recycling (e.g. tonnes CO_2 saved per person / household).	Would need to differentiate according to waste type and end fate to incentivise recycling of materials with greater net environmental benefit i.e. replacement of primary materials. Indicator aims to enhance focus on 'high benefit' materials and applications takes into account open and closed loop recycling.
4	Reuse & prep for reuse & recycling (integrated contract)	Carbon based metric related to re-use, preparation for re-use and recycling (e.g. tonnes CO_2 saved per person / household).	This might be a useful way of capturing the overall performance where the contractor is tasked with several tiers of the hierarchy, for example, reuse, preparation for reuse and recycling. Other means of weighting performance at different tiers in the hierarchy could also be used.
5a	Recovery	(Change in) proportion sent for non-recycling recovery.	Clear definitions needed for what constitutes material recovery other than recycling. There may also be a need to specify acceptable destinations for the various waste types collected (so as to ensure that quality is not undermined).
5b		(Change in) proportion actually used in recovery process.	Clear definitions required to establish the point at which the material can be said to be recovered. This would require collaboration of actors along the supply chain to establish accurate figures and ensure quality is maximised.
5c		(Change in) proportion of material extracted from ash for recycling in closed loop processes (typically, metals).	There may be a need to specify acceptable destinations for the various waste types collected (so as to ensure that quality is not undermined). Alternatively / in addition, indicator could measure CO_2 benefits associated with recycling processes.
5d		Availability	i.e. availability of plant, usually over the course of a year, in order to treat tonnage requiring treatment.
5e		Efficiency of energy generation	Clear definition of energy efficiency will be required including inclusion of parasitic load and possibly differentiating between heat and electrical power and also taking into consideration, energy invested in pre-treatment of waste.

5f		Emissions per tonne of waste input (as measured though, for example, weighted measures of pollutants emitted)	Again clear definition of types of pollutants to be measured will be required as well as specification for measurement method.
5g		Distance waste transported per tonne, on average (weighted average).	This indicator would be designed to incentivise a minimisation in transport but would need to be applied in conjunction with another indicator or indicators (e.g. an overall GHG indicator) regarding end fates to ensure that higher environmental cost treatments where not preferred by the contractor because they happen to involve shorter transport distances.
6a	Disposal	(Change in) proportion received for disposal.	Setting this indicator would require clear definitions and probably acceptable destinations to be agreed to ensure that the waste hierarchy is respected.
6b		(Change in) proportion sent for incineration vs landfill.	Setting this indicator would require clear definitions and probably acceptable destinations to be agreed to ensure that the waste hierarchy is respected. Where incineration is being used, consideration should be given to setting a suitable indicator incentivising energy recovery efficiency.
6c		Distance waste transported per tonne, on average (weighted average).	This indicator would be designed to incentivise a minimisation in transport but would need to be applied in conjunction with another indicator or indicators (e.g. an overall GHG indicator) regarding end fates to ensure that higher environmental cost treatments where not preferred by the contractor because they happen to involve shorter transport distances.
7a	Other Environmental Indicators	GHGs - total vs direct emissions, per household	These 'whole system' indicators are difficult to apply except perhaps in situations where a single contract covers the whole collection and possibly treatment system as well. There is a risk of double-counting benefits or dis-benefits where these indicators are applied alongside others that relate for example to the fate of materials since you don't want to incentivise the same activity twice.
7b		Embedded energy consumption	

Establishing baselines and targets for use with these indicators requires investment in time to get right and is related, at least in part, to the availability of robust management information on historic and current performance levels, as discussed in Section 5.4.2. In addition to setting targets for improvement against performance indicators there needs to be an understanding of the reasonable limits to performance improvements being required given the scope of the contract, the infrastructure likely to be used, technology limits and economic limits.

As suggested with indicators 7 a and b in Table 1, further differentiation could be provided through reference to measures of environmental benefit. For example, this could be achieved through weighting of incentives according to different waste streams and end destinations according to Greenhouse Gas (GHG) emissions, calculated through reference to life cycle analysis of primary and secondary materials. For example, the performance of material streams for which the benefit of additional recycling is high, such as metals, could be more heavily incentivised than material streams such as glass, for which the benefit of additional recycling is relatively low, and where some material is used in applications that do not generate as much environmental benefit as in closed loop recycling applications.

5.4 Performance Incentives

5.4.1 Setting Targets

Another related consideration is how targets, related to the performance indicators discussed in 5.3, that trigger payment or deduction mechanisms are set. There are three main options here:

- The buyer of the service sets the target based on figures derived from historic performance and/or with reference to a formal target (set perhaps at a municipality, regional or national level);
- The buyer sets the target based on benchmarked performance from other comparable municipalities whereby payment or deduction is made on performance relative to the average achieved by the benchmarked group for the same time period; or
- The supplier 'bids-back' a target or performance level that they deem achievable as part of the procurement process. This is likely to directly reflect the level of risk of missing the target (primarily commercial, but also, potentially, reputational) that the supplier is willing to price into its offer.

Alternatively it is possible that a hybrid approach is taken whereby the supplier is invited to 'bid-back' a target level of performance but this has to exceed a level set by the buyer. For example, a municipality procuring a contract for the collection of household residual and dry recycling from the kerbside may set a minimum rate of recycling to be achieved with bidders invited to bid-back a target level equal to, or in excess, of that minimum rate. Part of the evaluation would then be based on the costs associated with different

levels of performance bid back by bidders: the target rate bid back by the successful bidder would then become contractual, and a payment and / or deduction mechanism would be designed around that target rate.

An alternative to the target-led approach to payments or deductions is one based on continuous improvement against a baseline; for example a payment at a set rate for every 5% annual percentage point improvement in recycling rate achieved by a recycling collection contract.

Regarding the use of benchmarking for setting performance targets, benchmarking of municipalities with similar characteristics allows to compare the effectiveness of their policies and can prove to be a strong driver towards better waste management policy. In the Netherlands for example, the NVRD (umbrella organization of the public waste management sector) organizes a benchmark survey of groups of municipalities allowing to compare both the efficiency and the effectiveness of their waste management policy.

The best approach is likely to be one whereby a (limited) mix of performance indicators is applied with payments or deductions designed to work in combination to incentivise the desired performance. The best combinations will be determined largely by the scope of the contract; this is discussed in Section 6.0.

5.4.2 Data Quality

The ability to implement performance based waste management contracts is highly dependent on the system for reporting of performance-related data which is in place since an effective performance incentive mechanism is likely to be based on the achievement of set levels of performance for which accurate and consistent data is a pre-requisite.

Currently, the quality of reporting of recycling levels by material stream and treatment varies considerably between (and sometimes within) countries, however it is rare that complete disaggregation according to both parameters is not available. Some contractors are however reluctant to provide quantitative and qualitative information about their recycling channels, considering this to be commercially sensitive information. However, this could be overcome by agreeing on an independent third-party audit, whereby an external partner who is bound by a confidentiality clause reports on an annual basis about the performances of the recycling, without giving more details about the what and where to the contracting municipality.

Where contractors are happy to provide information, there may still be the requirement for up-front investment of time, prior to the contract procurement process, to ensuring that the data required for the intended performance indicator(s) is available at a sufficient level of detail and is sufficiently robust to enable a reasonable baseline and performance targets and limits to be set and monitored through the course of the contract duration. This requirement can be addressed as a specification requirement during the contract mobilisation phase; alternatively a ‘period of grace’ could be introduced whereby the contractor is required to put monitoring systems in place during the first year of contract with the performance mechanism related to this information

applying from year 2 onwards, having established both the system and the baseline performance level.

5.4.3 Types of Incentives

It is important to consider which type of incentive, whether in the form of deductions or bonuses (or a combination of both) are likely to be the most effective, and whether this might differ according to the contract scope and who the actors involved are. For example, several studies from the UK have failed to find a clear causal relationship between the offering of 'positive incentives' (such as shopping vouchers) to residents and increased levels of recycling.[9] Evidence or benchmarking with other comparable municipalities, of the likely potential for improvement in performance is therefore useful to help when introducing new incentive mechanisms. Another source of data that can be useful to establish appropriate levels for performance incentive mechanism is life cycle assessment data, for example for the different waste types and treatment fates according to greenhouse gas emissions. That being said, it is acknowledged that LCA is a complex area requiring specialist skills to carry out, not least in establishing a suitable system boundary for the assessment.

It is also important to distinguish minimum standards (i.e. those that are part of the service contract itself and represent the minimum service level that is acceptable to the buyer of services – for example minimum levels of missed collections) from those aspects of performance which the incentive is intended influence. There is a risk that incentivisation leads to additional payment for items of performance already included in the contract in the form of minimum standards. In other words, it is important to focus on achieving *additionality* through the incentive mechanism – for example, the incentive might relate to the change (relative to a baseline quantity) in the amount of residual waste per household, as opposed to the level that would be expected to be achieved even if the performance incentive was absent.

There is an interesting question as to whether payments to contractors for collecting/handling *less* waste are seen as being 'fair' and, linked to this, a reasonable use of taxpayers money. We would argue that as long as the costs are borne by the most appropriate actors, or fairly distributed between them, and the overall objective is to reduce whole system cost and increase the proportion of waste that is genuinely managed at the top of the hierarchy, it is possible to present a solid argument for this method being 'fair'. Evidently, municipalities should not pay excessive amounts for performance improvements which deliver limited benefit to themselves, unless there are good reasons for doing so.

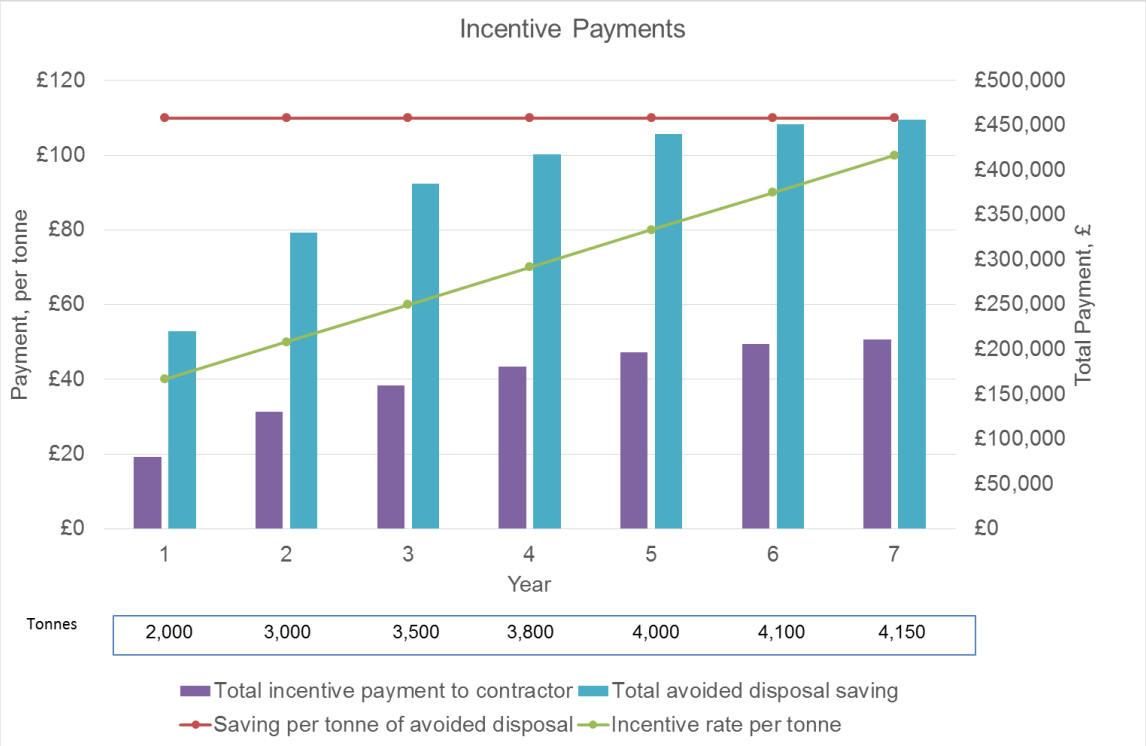
---

[9] e.g. DEFRA (2006). Evaluation of the Household Waste Incentives Pilot Scheme http://archive.defra.gov.uk/environment/waste/localauth/documents/aeat-householdincentives.pdf and Eunomia and Serco (2014). Investigating the Impact of Recycling Incentive Schemes. Available from: http://www.eunomia.co.uk/reports-tools/investigating-the-impact-of-recycling-incentive-schemes-summary/

5.4.4 Levels of Incentives

This raises the question of the level at which the incentive should be set: in general, incentives should not be offered where the benefit to the municipality, or to society in general, or both, is far less than the incentive on offer. Hence, in the above circumstances, a basic benchmark might be to ensure that performance-related payments for waste prevention did not exceed the avoided costs of residual waste collection and treatment / disposal (unless there were good reasons for this in respect of, for example, the environmental rationale for waste prevention, or the need to meet a specific target). That does not mean they might not be lower than this: local authorities need to act – sometimes, as a matter of law (as well as principle) – in a financially prudent manner. Hence, there may be good reasons to have a schedule of increasing marginal bonuses, recognising that a contractor is likely to seek the lowest cost wins first, and the more expensive ones later. The maximum level might be an incentive marginally below the avoided residual waste treatment / disposal cost. An example of this scenario is presented in **Error! Reference source not found.** where, for an increasing tonnage of avoided disposal over time, the contractor receives an increasing proportion of the resulting financial saving to the municipality, reflecting the situation described above where the later years of avoided disposal are harder for the contractor to achieve.

Figure 3: Example Avoided Disposal Incentive Payments



Another factor to consider though in setting the level of incentive is the potential for the contractor to suffer a loss of turnover (and therefore profit) as a consequence of meeting a performance target. For example, this might be the case where the contractor is primarily paid based on the tonnage of waste collected. In these cases, the incentive should be set at a level that at least marginally exceeds the value of the profit 'lost'. As

long as this lost profit is fully compensated, the contractor should accept the compensation as an incentive.

These issues highlight how important it is likely to be for all contracts for residual waste treatment / disposal to be structured in such a way that savings are realised when the tonnage of residual waste sent for treatment / disposal is reduced at the margin: if there are no savings to be made from reducing the quantity of residual waste sent for treatment / disposal, then the financial incentive for waste prevention is, essentially, zero (or close to it, recognising that there may be some limited savings on the collection side).

It is worth restating the point, however, that the incentives might relate to matters that are not purely financial; waste recycling, for example, may generate benefits in terms of greenhouse gas reduction which are not reflected (even imperfectly through the ETS) in market prices. As such, environmentally minded municipalities could consider setting incentives related to greenhouse gas savings, and a reputable measure of the external benefits which may accrue to society.

Of course, incentives must change the behaviour of the contractor, rather than allow them to build in a risk premium to their bidding price or treat the absence of a deduction as a windfall. Municipalities setting incentive levels should be attuned to the risk of unintended consequences from setting incentive levels at too high (or low) a rate; for example in the case of Pay As You Through (PAYT) incentives, a waste prevention effect may be observed at the kerbside as a result but fly-tipping may increase thereby introducing additional cost to another part of the system. PAYT works best when it contains a fixed element and a variable element which together partially reflect the cost of waste management.

5.5 Geographical Considerations

The geographic scope of a waste management contract should ideally reflect the economically optimum scale for the infrastructure or logistics to provide the services being contracted for. In reality however it is usually limited by the administrative area, which in different Member States across the EU varies from very small to very large. This is however true of any type of contract, not exclusively performance contracts.

It generally makes sense to benefit from economies of scale, subject to the costs of haulage becoming excessive. The geographical scope should be limited by the point at which economies of scale for infrastructure or logistics are significantly reduced, and risks increase because of the scale of the enterprise. Assessment of the appropriate geographic scale should be carried out on a case by case basis for each contract.

As regards the most convenient geographical scope for the establishment of performance contracts, the relationship between the size of the administrative area and the optimal geographic area for the waste management infrastructure necessary for the services provided is the key consideration. Either the contract covers:

- The same area as the optimal geographic area for the waste management infrastructure;

- A larger area than the optimal geographic area for the waste management infrastructure; or
- A smaller area than the optimal geographic area for the waste management infrastructure.

The question of what is the optimal geographic area for waste management infrastructure will of course depend on the type of waste management activity, for example in some Member States (such as the UK) collection of waste is based on smaller geographic areas (usually restricted to cities or other large urban areas) whereas treatment and disposal of residual waste can be managed at a larger geographic area level. The advantage of linking the geographic area covered by the contract to the area most logically covered by the waste management activity or infrastructure being contracted for is that it would usually, all other things being equal, result in more optimal operational arrangements which should in theory be reflected in contract cost. Pursuing such a strategy can lead to the need for more than one municipality working together to jointly procure a waste management contract, in order to gain benefit from economies of scale in service delivery (amongst other benefits e.g. consistency of service provision for residents across a wider area such as sub-regionally or on a larger scale).

As noted however, this issue is however not immediately relevant for the establishment of performance-based contracting since the types of performance indicators and related incentive/deduction payments best applied are more closely related to the scope and duration of the contract, rather than the geographic area covered. For this reason we have not considered geographical coverage in further detail when examining some specific contract variant examples in Section 6.0.

5.6 Duration

As in establishing the optimal geographical area for a waste performance contract, there are several general scenarios that can be considered with regard to contract duration:

- Shorter durations (less than the lifespan of infrastructure for service delivery);
- Longer durations (greater than the lifespan of infrastructure for service delivery);
- Where a waste performance contract may push for shorter term goals over the lifespan of a waste management contract.

In assessing which of these scenarios is most applicable to the specific contract situation in hand, the following potential consequences are worthy of consideration:

- Constancy versus flexibility – For example, on the one hand, contracting needs to provide the stability required for long term planning and may need to be long enough to attract investment (if the intention is to develop / introduce new infrastructure). On the other hand having the flexibility to adjust incentive schedules if they are too, or insufficiently ambitious would aid the optimisation of the contract over time and according to circumstance. Shorter durations may be seen as more flexible, while longer durations provide longer term stability, and may also attract lower contract costs where investment is required.

- In some places, the duration of waste management contracts is driven by the lifespan of the infrastructure and equipment need to deliver services – in the UK for example this is commonly around 7-8 years for collection contracts (this is largely related to the lifetime of vehicles) and perhaps 20 or more years for energy from waste facilities. If the municipality funds these investments, the duration of waste management contracts, and the performance contracts associated with them, become less important. Where it is the case that external funding is needed for the investments in performance improving infrastructure and equipment, then the waste management and performance contracts should be tailored to the life of the main infrastructure involved.
- Incentive profiling over time - How incentives are applied over the course of the contract may affect how, and even whether, the providers are able to meet the conditions of the contract. One decision to make is whether incentives should be payable in retrospect as a single payment, for example following achievement of a performance target measured on an annual basis, or whether payments, whether bonuses or penalties, are profiled over time. This could be done on a more continuous basis, or in a series of discrete sums at milestone points. The longer the contract, the more influence the nature of profiling may have on the contractor's decision making and performance.
- It is desirable for there to be some flexibility built in to performance contracting, such as a period for review, lest the contract terms reveal themselves to be too ambitious / generous, or insufficiently so. Having said that, under the new EU Procurement Directive (2014), Article 72 "Modification of contracts during their term", the variation allowed in contracts will be limited in the extent to which the economic balance can be changed in favour of the contractor, and instead, variations must keep the economic balance the same, or in favour of the public authority. This will limit the kinds of revisions that can be made, and may, over time have the effect of encouraging shorter contract terms should municipalities consider flexibility to change contract terms more important than long term contract security.
- In a similar vein to the previous point, the same considerations would apply when considering introducing new performance contracting elements to a contract that is already in place, specifically, whether the change has implications for the economic balance of the contract. Additionally, the risk of challenge from the original unsuccessful bidders or other contractors needs to be taken into account where the introduction of new performance elements made part way through an existing contract could be construed by challengers as materially altering the basis on which the original contract was awarded. Clearly the best way to avoid any risk of falling foul of public procurement regulations is to only consider introducing new performance elements at the point at which a new contract is procured.
- As well as considering the impact of potential legislative or regulatory changes over the duration of the contract that may have an impact on the need to attain

certain levels of performance (the most common example being recycling rate targets, but with matters related to abatement of emissions also being of significance), the speed of technologically-driven performance improvements needs to be considered. Where these relate to legislative requirements in contracts, then 'change of law' provisions might be expected to be in place, allowing the contractor to make reasonable claims on the authority where these could not reasonably have been foreseen. Otherwise, the potential for continuous improvement could, where the matter relates to new information on performance, be dealt with through the review mechanism discussed above.

5.7 Governance Considerations

The governance structure of performance management contracts will largely depend on the relationship between the contracting parties. For example, where the client and the provider are part of the same organisation, a service entity and a client entity would need to be created to provide the governance structure necessary for contract-like elements to be implemented. In the context of a municipality contracting with a private business for the provision of waste management services, contracts should be based around the principles of clarity, practicability, enforceability and transparency of data for monitoring. As discussed in Section 5.4.2 there is also the possibility of contribution in the contract management arrangements from a third party providing independent monitoring of performance data, or possibly as an arbitrator in the event of a dispute between municipality and the contractor regarding performance levels or the application of a deduction or bonus payment.

5.8 Relationship with other Economic Instruments

Performance contracts do not operate in isolation from the wider regulatory and fiscal environment in operation. For this reason it is important for municipalities to consider how proposed performance incentives would operate in relation to wider economic considerations. The following examples are instructive:

- In countries where the cost of landfilling is currently low, then the financial benefits which flow from waste prevention, preparation for reuse, and improvements in recycling are correspondingly low. From the perspective of the municipality, the scope, and financial rationale, for offering incentives for managing waste further up the hierarchy away from landfill is lower. Even so, it might be possible to justify payments above those of the avoided disposal costs if the argument can be made in terms of avoided emissions from the avoided landfilling and the avoided waste generation. It is, however, much harder to justify this when facing any form of budget constraint, which most municipalities will be facing, not to mention specific (Member State) responsibilities vis a vis taxpayers. That having been said, if authorities face specific targets, or if they anticipate changes in law in future (such as rising landfill taxes), then performance incentives can serve to fill a gap left by the absence of legislation, or its anticipated introduction.

- On a related matter, the likelihood that a municipality would opt to introduce a Pay As You Throw (PAYT) scheme - recognising that the main effects may be to reduce waste generation, increase recycling rates, and reduce the amount of residual waste - is likely to be influenced by the way in which costs may change as these effects take hold. If there is reason to believe, for example, that the costs of recycling exceed those of collecting and treating / disposing of residual waste, then the PAYT scheme is likely to have the effect of increasing costs to the municipality. There is, therefore, a link between the financial rationale for PAYT and the costs of treating / disposing of residual waste.
- Municipalities may be (to varying degrees) beneficiaries of payments from Producer Responsibility Organisations (PRO) in lieu of their role in collecting, for example, packaging, or WEEE. In these situations, *if* their only obligation is to meet a given target, PROs may be comfortable paying for recycling of material up to target levels, but they may be reluctant to make payments for performance levels above what they are obliged to achieve under Member State legislation. Where municipalities incentivise additional performance which has the effect of increasing collection above a minimum level, then there may be a requirement to agree how PROs contribute to the cost of any additional contract performance payment due to contractors.
- Some WEEE PRO schemes might have an influence on the extent to which contractors can actively pursue reuse for this material; this example illustrates the point that where PRO schemes are in operation, the impact of these schemes, including constraints on collection organisations contracted by a municipality to deal with waste streams that sit outside the scheme, need to be taken into account when devising performance indicators.
- In some situations, there is no link between what the PRO does in terms of infrastructure, and what the municipality does. In these respects, then the scope of what PROs do is unlikely to ever fall in the scope of contracts let by the municipality (see above). In these cases, then where landfill taxes are introduced, and where they are increasing, the municipality has an incentive to reduce disposal, but the PRO scheme has none: the aim of the PRO scheme is simply to discharge its obligations in respect of recycling (and reuse / preparation for reuse as appropriate).

These types of situation highlight the potential links between performance contracting and other economic instruments, and the desirability of ensuring that municipal waste is managed in such a way that the incentives which economic instruments seek to convey influence the behaviour of the actors who the instruments seek to influence. So, for example, in the last example above, this could be dealt with by ensuring that PROs are financially responsible not only for collecting materials for reuse / recycling, but also, that they bear the costs of treatment /disposal of the relevant materials left in the residual waste stream.

6.0 Performance Contract Example Scenarios

In this section we present a limited number of specific examples of suggested features of performance contracts for a number of the different contract variants identified in Section 4.0. In the interests of brevity we have not attempted to cover every variant in respect of contract scope: rather, we have selected a small number which we consider to be the most common examples of contract type experienced by the majority of Member States.

With regard to the suggested performance indicators, we have included those from the list in Table 1 that we feel are most relevant; however we are not suggesting that all the indicators listed are used together. The intention should be to restrict the use of performance indicators to a minimum and only use those that:

- Incentivise the application of the waste hierarchy;
- Are most relevant to the scope of the contract;
- Are in line with the degree of control that the contractor can reasonably be expected to have over the contracts outputs related to those indicators; and
- Avoid the risk of 'double counting' or rewarding or penalising the contractor twice for the same outputs.

6.1 Example Scenarios

6.1.1 Kerbside/On-Road Container Refuse Collection Contract

Characteristic	Comments
Contract Scope	If scope covers collection of refuse only (for example where PRO schemes are in place covering collection of recycling), then the contractor is likely to have little influence over the amount of waste prevention or re-use / preparation for re-use activity. There may be opportunity to influence the amount of recycling or composting of biowaste through strict enforcement of any compulsory recycling policies and pay as you throw schemes in place, and where there is a recycling service of reasonable quality which households can reasonably be expected to use in preference to the refuse collection service. Note that due consideration needs to be given to the coverage of collection services in elaborating the performance criteria: in some countries, there is still less than complete coverage of households by the waste management service
Contractor Control	In this example of contract scope (refuse collection only) then there will be very little scope for the contractor to influence moving tonnage up the waste hierarchy to increase the volume or proportion that is re-used, prepared for re-use or recycled, particularly in those situations where there is an absence of door to door recycling collections and/or relatively under-developed communal and container park site recycling collections.
Performance Indicators	• (Change in) total quantity of residual waste collected – per person/household. • (Change in) proportion collected for recycling (where there is a good recycling service in place). Where the contractor has control over the destination of the refuse collected, the following indicators could be appropriate – but only where used in conjunction with the indicator above i.e. the first priority is to reduce the quantity of residual waste collected then for the remainder reduce the proportion sent to landfill: • (Change in) proportion sent for recovery. • (Change in) proportion sent for landfill.

Characteristic	Comments
Duration	Likely to be best set to align with reasonable operating lifespan of collection vehicles to allow contractor to make best economic use of capital.
Governance	If procuring jointly with neighbouring municipalities, consideration would need to be given to which municipality is the contracting authority for procurement and contract management and payment purposes. Inter-municipality charges would be required to recover shared contract payment costs and contract liabilities clearly established. Responsibility for contract management would need to be clearly established, and mechanisms for assessing the need for specific authorities to pay for specific shares might be required.
Other Economic Instruments	Ability to set any incentive at all is linked to the existence of quality recycling schemes, which, in turn, are considered to be a pre-requisite of PAYT schemes if they are in place.
Other Considerations	Penalty or bonus payment mechanism should be set carefully to reflect the real financial impact on the municipality of reduced or increased levels of residual waste (and hence, management through landfill, energy recovery or MBT) from changes in the quantity of refuse collected. Payment of penalties or bonuses likely to be linked to achievement of a notional target for absolute decrease in quantity of residual waste collected per household / inhabitant rather than achievement of an arbitrary target (unless related directly to the balance delivering the achievement of a specified recycling target). Where such contracts include the collection of refuse from private sector businesses alongside collections from households any performance mechanism needs to be designed such that changes in performance are not simply the result of spurious measures of changes in the quantity of non-household waste collected (achieved not through waste prevention but simply through a reduction in non-household waste collections or reduction in service provision). Assuming that a contract covers a defined number of households, then in principle, this allows for some measurement of performance as long as the quantity of household waste can be clearly identified.

6.1.2 Bulky Waste Collection

Characteristic	Comments
Contract Scope	Standalone bulky waste contracts should, where possible include a preparation for re-use incentive, as well as recycling incentives. Municipalities should make this requirement clear within the contract specification at tendering stage. Here, we assume the bulky waste collection is the door-to-door service, and not the CA sites / container parks (see below). We assume that the scope of the contract includes making arrangements for preparation for reuse, and recycling, but that the municipality makes provision for management of residual wastes.
Contractor Control	The contractor would be expected to ensure that waste is collected in such a way that opportunities for preparation for reuse are seized, and that the remaining waste is recycled as far as possible.
Performance Indicators	• (Change in) proportion/value of material sold for reuse. • Note: This is probably only practical where the scope of the contract allows for the contractor to sell material that has been adequately prepared for reuse. • (Change in) proportion/value of material that is prepared for reuse. • (Change in) proportion / quantity sent for recycling. • (Change in) proportion which is sent for (non-recycling) recovery. • (Change in) proportion which is dealt with as residual waste. • GHGs saved through recycling and preparation for reuse of materials.
Duration	Likely to be influenced by the style of collection and the types of vehicles and other infrastructure used to allow contractor to make best economic use of capital.

Characteristic	Comments
Governance	Conditions for contract governance and management for these types of contracts should not be overly burdensome so as to preclude the award to small independent re-use organisations, often charitable and social enterprises. It may be necessary to include explicit provision for the sub-contracting of either the collection element or the re-use / preparation for re-use element of the service to encourage a focus on moving the treatment of suitable materials collected up the waste hierarchy.
Other Economic Instruments	If the contractor does not have responsibility for management of residual waste, then it becomes important to ensure the contractor behaves as though they do, so that they have an incentive to reduce residual waste. The higher the costs of managing residual waste, the more important this may be. From this specific perspective it could be argued that bulky waste contracts are let as part of an integrated contract with residual waste collection.
Other Considerations	It should be noted that in this case, there may be competition across levels of the hierarchy in that the more successful the contractor is in respect of reuse and preparation for reuse, the lower the recycling rate may become. As such, it might be worth considering a composite index which assigns different weights to the proportion sent for reuse/preparation for reuse, and the proportion sent for recycling. One way of doing this is to assign GHG savings per tonne of waste to the various streams.

6.1.3 Container Parks / CA Sites

Characteristic	Comments

Characteristic	Comments
Contract Scope	In this example it is assumed that the Contractor manages all container parks and CA sites under the municipality's control and that there is a good provision of containment to allow for separate collection of the main material streams. It is assumed that this covers arrangements for reuse, preparation for reuse, and recycling of the materials received, as well as arrangements for composting / digestion and the treatment / disposal of residual waste. Note also that some consideration should be given to how the producer responsibility system for WEEE (and other materials as appropriate) influences the opportunities for reuse / preparation for reuse in particular.
Contractor Control	The contractor has control over how the sites are operated and managed (albeit that sites typically operate under constraints in respect of their layout). They also have control over who uses the sites, so that if the intention is that only households and / or another specific users can use the site, then they can exert control over waste quantities. They have limited control over any change in waste quantities which arises through, for example, changes in the way door-to-door collections are implemented (restricted refuse container sizes) or the way incentives are applied (e.g. pay as you throw). It is generally sensible to apply the same charges for residual waste at container parks as in the pay as you throw system to prevent flows of material into sites as a means of avoiding pay as you throw charges.

Characteristic	Comments
Performance Indicators	• (Change in) proportion/value of material sold or donated for reuse. • (Change in) proportion/value of material prepared for reuse. • (Change in) proportion / quantity sent for recycling. • (Change in) proportion / quantity sent for composting/ digestion. Where the contractor has control of where collected material is sent, the following indicators may also be applicable: • (Change in) proportion / quantity recycled. • (Change in) proportion / quantity composted/ digested. • Carbon based metric related to recycling/ composting (e.g. tonnes CO_2 saved per person / household). • Distance waste transported per tonne, on average (weighted average). • (Change in) proportion sent for recovery. • (Change in) proportion sent for disposal.
Duration	Contract duration for these types of contracts is likely to be closely related to any capital investment for the site(s) and after that to the economic life of plant and containers in use. The duration of household collection contracts may also have a bearing on duration where there is expected to be a significant change in kerbside or communal collection system that is likely to have an impact on the amount of waste going into the container park / CA site system.
Governance	Generally straightforward contract governance arrangements will be required. Depending on where facilities are located and how administrative responsibility for collection and provision of such sites is arranged there may be issues related to 'cross-border' use of sites that need to be taken into account with some form of inter-authority management required to deal with this.

Characteristic	Comments
Other Economic Instruments	Given the close relationship between this contract and the door-to-door or communal refuse and recycling collection service in place, pay as you throw schemes or recycling incentives are likely to have an impact. Clearly one way to avoid pay as you throw charges at the kerbside is to utilise container parks or CA sites, provided that these latter facilities accept residual waste.
Other Considerations	One of the main aspects, already mentioned above is the relationship between the use of these facilities and the door-to-door kerbside/communal refuse and recycling collection system in place. Changes in the latter can have a significant impact on the former which is outside

6.1.4 Recycling Materials Sorting

Characteristic	Comments
Contract Scope	Assumed to be sorting of materials only, with a separate contractor responsible for collection.
Contractor Control	The contractor has some control over what is accepted into the sorting facility, in the form of a suitable input specification. Given that input specification, the contractor might expect to achieve a given level of performance, given an understanding of the nature of the input mix of materials.
Performance Indicators	• Proportion of material accepted which is sent for recycling. • Proportion of material received which is recycled. • Value of material recycled per tonne of input (relative to a weighted index value). • Carbon based metric related to recycling (e.g. tonnes CO_2 saved per person / household). • Distance waste transported per tonne, on average (weighted average).

Characteristic	Comments
Duration	Contract duration is likely to be related to the economic lifespan of the infrastructure involved (and required in order to achieve contractual performance targets). In addition, anticipated timescales for changes to collections systems may also have a bearing on contract durations.
Governance	No particular issues anticipated.
Other Economic Instruments	Potential fines levied by national governments related to the non-achievement of national recycling targets could be reflected in the recycling-related performance targets set as a means for the municipality to pass on a proportion of the risk of not achieving a specific recycling rate.
Other Considerations	In order to set a reliable indicator / target there would need to be an expectation of a constant collection system (i.e. no new materials or sources thereof anticipated). Low rejects at the back of the sorting plant (as a % of input) might imply more contaminated streams being sent to reprocessing facilities. Hence, a focus on material recycled, as opposed to material sent for recycling is preferable.

6.1.5 Incineration

Characteristic	Comments
Contract Scope	Assumed to be the management of residual waste through incineration. This example is for a standalone contract.
Contractor Control	The contractor has control over the extent to which the facility operates in a reliable and efficient manner, given waste which lies within the design parameters of the facility. The operation (and at the start of the contract, the choice) of flue gas cleaning system is also in the hands of the contractor. The degree to which collection systems favour the diversion of material away from incineration is outside the control of the contractor in this example and therefore there is no risk that the contractor could be incentivised to act to reduce waste prevention or recycling/composting as he/she is only responsible for treating the residual waste delivered to the facility.

Performance Indicators	• Availability. • Efficiency of energy generation (account to be taken of energy used for waste pre-treatment) • Emissions per tonne on waste input (as measured though, for example, weighted measures of pollutants emitted) • Proportion of material extracted from ash for recycling in closed loop processes (typically, metals) • CO_2 benefits associated with recycling processes. • (Change in) proportion of output material sent to landfill. • Distance waste transported per tonne, on average (weighted average).
Duration	Contracts for incineration or other thermal treatment tend to be long term (e.g. 20+ years) reflecting the financing arrangements of the infrastructure. Long term contracts with operators can allow municipalities to take advantage of lower prices for long term security of supply. Alternatively where operators have spare capacity to sell, shorter contracts are more common. Requiring contractors to meet stringent performance levels of the type suggested above is likely to be impractical for shorter contracts where there is less incentive for the contractor to agree to such contract terms.
Governance	No special considerations anticipated.
Other Economic Instruments	The implementation of or change to pay as you through charges during a contract for incineration can significantly impact the amount of material delivered to the facility. This can conflict with contracts including guaranteed minimum tonnage agreements. An incineration tax would also have a material bearing on the economics of the contract. A provision within the contract that allows for a review of contract terms should such a change in the taxation regime would allow for the impact to be addressed and any changes to the contract, including performance clauses to be adjusted.
Other Considerations	-

6.1.6 Integrated Collection Contract (kerbside and on-road container collection, bulky waste collection and CA Sites)

Characteristic	Comments
Contract Scope	In this example the contractor is responsible for delivering all kerbside door-to-door and on-road container collections of refuse, recycling and biowaste as well as bulky waste collection and the provision of container parks and/or CA sites within a single contract.
Contractor Control	The contractor has control of the majority of outputs on the collection side for this type of contract.
Performance Indicators	• (Change in) total quantity of waste collected/treated – per person/household. • (Change in) proportion/value of material sold or donated for reuse. • (Change in) proportion/value of material sent for preparation for reuse. • Although multiple indicators for recycling and composting/digestion (collected for and sent for) could be used. It would be simpler to manage a single carbon based metric related to recycling (e.g. tonnes CO_2 saved per person / household). • (Change in) proportion sent for recovery. • (Change in) proportion sent for disposal.
Duration	Since the main capital expenditure for this type of contract is likely to be collection infrastructure, specifically collection vehicles, the operating lifespan of these vehicles is likely to have a major bearing on contract duration.

Characteristic	Comments
Governance	Governance arrangements will be similar to the contract types discussed above, albeit there will need to be a focus on setting and managing contract monitoring and management arrangements between contracting parties that allow for the co-ordination of services within scope. It is arguable that the fact that this sort of integrated contract makes governance more straightforward since the majority of service outputs are within the control of the contractor. Given the wide contract scope it is also possible that the part of the contract is delivered by sub-contractors. It is therefore important that appropriate contract provisions are put in place to ensure that it is clear that the lead contractor has responsibility for the achievement of performance targets and will be subject to the associated bonus or penalty payments. The contractor should be required to provide appropriate evidence that it has the required sub-contract provisions, warranties etc. in place.
Other Economic Instruments	As discussed for the separate collection contracts described above, the impact of other economic instruments such as taxation or pay as you throw schemes should be taken into account.
Other Considerations	There may be some interactions between the bulky waste collection route and the extent to which households make use of container parks, or indeed, their regular household collection. This sort of integrated collections contract further increases the extent to which the contractor exerts control across the whole waste stream and therefore makes more comprehensive 'whole system' performance indicators applicable.

The extent to which the overall payment to the contractor is driven by performance incentives can vary considerably. In the UK, where performance mechanisms are relatively common in waste management contracts, contract structures range from those where the contractor's ability to make a profit is entirely driven by the performance mechanism to those where the performance mechanism is intended to provide an incentive through a more marginal impact on remuneration. The broad mechanisms used include:

- Mechanisms where a specific quantity or proportion of remuneration is 'at risk' subject to meeting particular performance standards. For example, a proportion of the maximum remuneration available to the contractor representing the contractor's profit margin (and sometime corporate

overhead contribution) might be placed at risk. This might be divided between a number of key performance indicators, so that the contractor would have to fail to meet all of its performance targets to make no profit from the contract. These mechanisms are relatively simple to operate, but are somewhat crude and rely on the right targets and deduction values being set to ensure that the mechanism has the intended effect;

- Mechanisms where specific deductions and positive incentives are attributed to specific outcomes. Here, the base payment to the contractor is calculated on the basis of, for example, a schedule of rates, but this is then adjusted to reflect the deductions and bonuses that apply based on actual performance. These mechanisms can be simple or highly complex and rely on accurate and indisputable sources of data being available for all indicators; and
- Mechanisms where a points-based scoring system is used to reflect performance against a 'basket of indices', with different indicators often being given a different weighting to reflect the relative importance to the contracting authority of different indicators. In these mechanisms, each point is given a financial value. The baseline performance level is typically converted to points, with points accrued above the baseline resulting in a bonus payment and points below resulting in a deduction. Generally though, a band is operated above and below the baseline where no financial deduction or bonus is applied, meaning that marginal differences from the baseline do not result in any addition or subtraction from payment. These mechanisms can be very sophisticated and reflect the complex trade-offs between different indicators, but can also be complicated and costly to operate and risk disputes where data sources are not entirely reliable.

7.0 Conclusions and Recommendations

Attempting to provide a comprehensive discussion of the benefits and mechanics of establishing and improving performance contracting within the waste management sector across the EU within an accessible report structure is an ambitious undertaking. Clearly the preceding discussion only scratches the surface of a complex issue; there are numerous different service and contracting types in operation across Member States as well as differences in contract law and the transposition of EU Public Procurement Directives; this variation in the contractual landscape, not to mention historic custom and practice, will have a significant influence on the way in which performance contracts to improve environmental impact in waste management can best be developed.

There are however a few key considerations emerging from the brief summary presented within this report, which in our view apply in general that we feel, are worthy of highlighting:

- The aim of moving a larger proportion of waste to be managed at higher levels of the hierarchy is best achieved through the effective application of performance incentives at the collection end of the waste management system. There is relatively fewer opportunities to increase levels of waste

prevention and re-use of resources through performance-based contracts for residual waste treatment or disposal services for example;

- That said, opportunity does still exist at the lower levels of the hierarchy; a contractor providing thermal treatment (as a stand-alone contract) could be offered incentives to extract more recyclable waste from ash residues, or to find suitable end uses for the ash. We would of course expect that in this scenario contracts further up the waste management chain (i.e. collection and sorting) have previously been designed to minimise the amount of residual waste remaining that requires thermal treatment.
- Further, performance contracts that cover door-to-door collection where there is a good recycling and biowaste collection scheme in place, and those that also cover bulky waste collection and provision of CA sites can have a more positive effect than, for example, on-road communal containers or container parks; this is due to the fact that in these contracts the contractor is able to more easily directly influence how householders present waste for collection;
- The wider the scope of the contract (i.e. the more waste streams and collection methods in scope), and the wider span of control over outputs that the contractor has, the better chance a municipality has in applying 'whole system' performance requirements which minimise duplication or conflict between different indicators;
- The scope of the contract and the scope of the performance mechanism, in basic terms, must match up, reflecting how the market works (i.e. the scope of each entity/contractor's services) in different countries. Where this is not already the case this can be achieved by the transferral of risks and responsibilities for activities outside of the contractor's scope to that contractor, hence bringing the scope of the contract and the scope of the performance mechanism in line.
- When it comes to gathering information to support performance mechanisms, weight based measures are most informative if they are disaggregated by end destination (which can be aligned to waste hierarchy level) and also disaggregated by material type.
- Municipalities should consider which performance indicators to include in contracts carefully and keep them to a few key measures that are predicted to have the most positive effect, designing associated bonus or penalty mechanisms that take account of the span of control that the contractor has to effect service performance levels;
- The performance measure is ideally specified in terms of a change relative to a baseline (which can be linked to a projection if needs be). In other words, it measures a change relative to some nominal standard of performance which can be 'expected'. This is likely to allow for the use of stronger incentives, at the margin, for performance improvements;
- As well as financial incentives, others might relate to matters that are not purely financial; waste recycling, for example, may generate benefits in terms

of greenhouse gas reduction which are not reflected (even imperfectly through the ETS) in market prices. As such, environmentally minded municipalities could consider setting incentives related to greenhouse gas savings, and a reputable measure of the external benefits which may accrue to society.

- Waste production does not happen in a vacuum and even where a contractor has a wide span of control, other factors (e.g. economic performance) will have a bearing on consumption and the related waste production. Ideally therefore performance contracts should include a mechanism that is designed as far as is possible to normalise outputs to take account of these other changes; for example, indexation related to an appropriate economic indicator such as GDP or per capita disposable income or expenditure, possibly with an additional adjustment for an ongoing waste minimisation effect (if such a trend exists).

Given the constraints of the scope of this project we have only been able to 'scratch the surface' of this complex issue. We envisage that there is likely to be demand from readers of this report for further development of the concepts and discussions contained within and we would recommend that further work might include:

- Development of more detailed guidance on how performance contracts documentation may be structured within the context of the variation of contract and procurement law across Member States;
- Development of a limited number of specific case study examples (possibly utilising ACR+ members as one source of examples);
- Development of website content, hosted by ACR+ and/or EEB or co-hosted on new standalone platform to include:
  - This paper plus copies of presentation and other material from report launch;
  - An enhanced, interactive version of the matrix in the form of a 'decision tree' for municipalities to follow to provide guidance on how to structure performance contracts for the key contract type variants;
  - Links to other useful sources of information.