

Waste Regulations Route Map

April 2014

Introduction

Local authorities are major collectors of waste. As responsible public bodies, they are keen to ensure that their waste collection services are fully compliant with legal requirements. However, at times interpreting and applying these requirements can be difficult.

Many local authorities will be aware that they will soon be under a duty to separately collect four types of recyclable material, and must apply the Necessity and “TEEP” tests to determine if this is needed in their circumstances. Some have already commissioned advice on how these requirements might apply to them.

This Route Map has been commissioned in order to reduce the extent to which individual authorities need to invest in advice, and to help bring consistency and clarity to the way that the Waste England and Wales Regulations 2011 (as amended)¹ (‘the Regulations’) are interpreted.

About the Route Map

The Route Map is intended to help local authorities that collect waste to understand their legal obligations under the Regulations. It is particularly focused on Regulation 13, which concerns the separate collection of glass, metal, paper and plastic (‘the four materials’), but also explores closely related Regulation 12 requirements regarding the waste hierarchy. The Route Map:

- presents a **step by step process** for councils to follow as they assess whether their waste collection services are compliant with the requirement to separately collect certain materials;
- addresses some **frequently asked questions (FAQs)** about what the law requires; and
- signposts **useful resources** to help councils in their assessments.

It is addressed primarily to English Waste Collection

Authorities (WCAs) but is also relevant to Welsh authorities – and to Waste Disposal Authorities (WDAs), both in relation to the waste they collect at household waste and recycling centres and their exercise of their powers to direct WCAs regarding the delivery of waste and recycling.² It is therefore primarily concerned with household waste and similar commercial waste collected by or on behalf of local authorities, although the Regulations apply to waste more generally.³

It does not provide all the answers – **it will not tell a council which materials (if any) it must collect separately**. Interpretation of the Regulations is not straight-forward, and, in order to better understand the law in England and Wales, it is often useful to refer back to the EU Waste Framework Directive (WFD)⁴ of 2008 from which the legislation flows, and the European Commission’s guidance. The way that the WFD is transposed in the Regulations has

been the subject of judicial review,⁵ and the original wording of Regulation 13 was amended by Defra and Welsh Ministers in 2012, clarifying that co-mingling is not a form of separate collection.⁶

The key issue local authorities are likely to be concerned with is whether they must collect the four materials separately from one another, or whether they can collect some or all of them co-mingled. Whilst the Regulations express a clear presumption in favour of material being collected in separate streams,⁷ **there are circumstances under which it may be permissible to collect materials co-mingled**.⁸ Decisions about whether co-mingled collections are justifiable need to be taken locally, based on the particular circumstances in each area.⁹

Wherever possible, this Route Map relies directly on the wording of the law, or authoritative sources of interpretation such as EU guidance and relevant case law. Such sources are referenced throughout,

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and are listed in the Resources provided in Appendix A4.0 (see separate document). However, in order to help authorities think about how to apply the Regulations, the Route Map offers interpretations of the likely practical meaning of the law. Wherever interpretations are being offered, a conditional

form of words such as “authorities may need to...” is used. Whilst legal advice has been relied on in its preparation, local authorities should bear in mind that this document is not legal advice, and they may wish to obtain their own legal opinion, especially where they are considering implementing

or maintaining co-mingled collections. However, councils that follow a rational, proportionate process to decide what action they need to take, and put in place a process to review their approach, will have a good level of assurance.¹⁰

When do Local Authorities Need to Act?

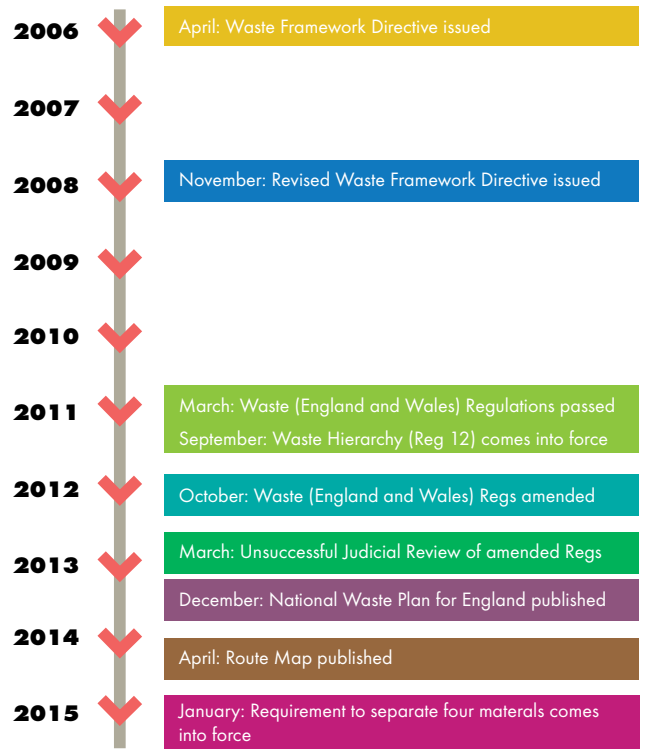
Figure 1 shows a timeline of the legislation, legal challenges and documents associated with the Regulations. The requirements set out in the Regulations flow from European legislation that dates from 2008, and some of them already apply. However, the uncertainty created by legal challenges to how the Regulations transposed the WFD and the expectation that Defra would provide guidance on how to interpret the law may until recently have made it difficult for local authorities to decide on a course of action, in particular regarding their response to Regulation 13. Regulation 13 states that from 1st January 2015, all WCAs will be required to collect paper, metals, plastics and glass separately, where doing so is:

- “necessary to ensure that waste undergoes recovery operations in accordance with Articles 4 and 13 of the Waste Framework Directive and to facilitate or improve recovery” (the ‘Necessity Test’); and
- “technically, environmentally and economically practicable”¹¹ (the ‘Practicability’ or ‘TEEP Test’).

In the Regulations, “recovery” has the same meaning as in the WFD, namely any “operation the principal result of which is waste serving a useful purpose by replacing other materials”.¹² It is used in the same way in the Route Map. “Recovery” in this sense includes recycling, as well as energy recovery and other forms of recovery such as backfilling. Therefore, the frequent references to “recovery” should not be interpreted as references to energy recovery. Further, the different forms of “recovery” are not all equal, with recycling being ranked above energy recovery. The WFD makes it clear that the reason for separate collection is to “promote high quality recycling”¹³ and to “move towards a European recycling society”.¹⁴ In the context of considering separate collection, the fact that an authority may make use of energy recovery instead of landfill will not make a substantive difference to the process it will need to follow to comply with the Regulations.

Authorities will want to ensure that they are compliant with the law. In addition to their normal desire to achieve high standards of compliance,

Figure 1: Waste Regulations Timeline



authorities will be aware of the possibility of judicial review or regulatory enforcement. The Environment Agency is responsible for enforcing compliance with the Regulations in England.¹⁵ They may use compliance, stop and/or restoration notices where they identify non-compliant practice.

Local authorities will in any case wish to take steps to examine the compliance of their waste collections with the requirements of the law to underpin and justify any decision they take regarding their future shape (which may in some cases include retaining their current collection model).

In particular, authorities considering a change in their collection method in the lead up to and most particularly after January 2015 will need to be particularly mindful. Where this could lead to paper, metals, plastics or glass being collected commingled with one or more other materials when it had previously been collected as a separate stream consideration will need to be given to whether the proposed new system is compliant.

However, **all local authorities may wish to ensure they have carried out a robust assessment of their collection systems before 1st January 2015**, even if

they currently separately collect the four materials, in case application of the necessity and TEEP tests reveals that changes are required. They will also want to ensure that they establish a process for future reviews of compliance, which may need to take place at periodic intervals or when relevant circumstances change – for example, when a collection, treatment or recycling contract ends, if vehicles are to be replaced, or if access to a new recycling facility or technology becomes available.

Structure of the Route Map

The Route Map begins with a diagram providing an overview of the suggested process for local authorities to follow to achieve compliance. The overview includes hyperlinks to enable you to navigate to additional information about how to follow the process, including process diagrams for the most complicated steps.

All steps of the Route Map require detailed consideration. In order to demonstrate compliance with the Regulations, local authorities will need to retain clear evidence of the process that they have carried out to provide an 'audit trail' to support the decision taken. Suggestions regarding evidence to retain are therefore also provided.

Additional background information, including references and a glossary, can be found in a separate Appendices document.

Note:

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The Route Map

Appendices to the Route Map are available as a separate document

Route Map Overview

Clicking on each
step will take you
to the relevant
section of the
Route Map

These steps are
broken down
in further flow
diagrams

Step 1 Determine What Waste is Collected and How

The purpose of this step is to ensure that you assemble all of the information that you will need regarding your current waste collection system as a point of comparison for separate collection.

1.1 Which types of waste and collection are covered?

The Regulations do not just apply to household waste, or to local authorities. All collectors and all waste, whether dry recyclables, food, bulky, commercial, industrial, construction, clinical or hazardous, falls within the scope of the waste hierarchy.¹⁶ All collection methods, including household waste and recycling centres, bring banks, street and beach cleansing and litter bins need to be considered.

‘Collection’ means “the gathering of waste, including the preliminary sorting and preliminary storage of waste for the purposes of transport to a waste treatment facility”.¹⁷ For the purposes of the Route Map, ‘collection’ is understood to take place when waste discarded by a householder or business is transferred from their control to the collector’s – for kerbside collections, when the person’s waste container is emptied or removed; and for bring sites, household waste recycling centres and street litter bins, when the person deposits the waste in the container.

1.2 What information is needed about current waste collections?

You will need to make reasonable estimates of the composition of the waste arising within your area that you collect. Given that collecting local compositional data can be expensive and time-consuming, it may be more proportionate to work from national or regional data sets, unless there are clear reasons to think that your local waste arisings are atypical.¹⁸

- Composition information will be key to deciding which waste streams can be collected separately, and how effective current collection systems are.
- Compositions should be broken down in detail to avoid large quantities of material being shown as ‘other’ or ‘mixed’ waste.
- You need to start with a clear picture of your current waste collection system:
 - Which materials are collected separately from one another?
 - Which are collected co-mingled, but separate from refuse?

- Which materials are not targeted by recycling collections and remain in residual waste?

- What does it cost to operate?
- Would you incur any additional costs if you exited or amended any current collection contract?

In the course of the Route Map you will need to consider all materials, and consider whether they could be collected separately from the residual stream to enable them to be moved up the waste hierarchy. The process for most materials is explained in Step 3. Whilst the decision regarding which materials should be considered will need to be made based on local circumstances, examples include:

- waste oil, separate collections of which Article 21 of the WFD says member states shall take the necessary measures to implement where technically feasible;
- food and garden waste, separate collections of which Article 22 of the WFD says member states should take steps to encourage; and

- Other material streams that may be identified separately in your compositional analysis. The Defra Municipal Waste Composition study highlights:

- Card;
- Fines;
- Furniture;
- Glass;
- Hazardous;
- Mattresses;
- Metal;
- Miscellaneous combustible;
- Miscellaneous non-combustible;
- Paper;
- Plastics;
- Sanitary;
- Soil;
- Textiles;
- WEEE; and
- Wood.

In particular, in order to undertake Step 4 you need to understand the position regarding the collection of the four materials – glass, metal, paper and plastic.

1.3 Evidence

At the end of Step 1, you should ensure you have records of:

- the compositional analysis relied upon in your work, and how it was derived (e.g. from national figures, or a local survey);
- a description of your collection method(s), the costs and any income;
- analysis of how much waste of each type is collected through each method; and
- any key contract documents, any costs associated with varying or ending these contracts, and records of decisions taken in the course of adopting your current collection system.

Step 2

Check How Collected Materials are Treated and Recycled

In addition to understanding how waste is collected, you also need to understand how each stream is currently managed. The purpose of this step is to gather the information regarding your recycling, treatment and disposal arrangements you will need later in the process to inform and justify your decision making.

2.1 Which types of waste and collection are covered?

Using your analysis from Step 1 of the waste that is collected and the methods used, check the following for each material:

- Once collected, how is it currently managed (e.g. is it sent directly for reprocessing, composted, separated in a MRF, sent for incineration, subject to MBT)?
- Is it mixed with any other waste after collection?¹⁹
- Where on the waste hierarchy does its current method of management lie?
 - Is it being sent for disposal?
 - Is it being recovered, either through:
 - energy or other recovery; or
 - recycling?
 - Is it being prepared for reuse?
 - Are measures being taken to prevent it?
- What is the composition of the material you supply to any MRF you currently use?
- What quantity of each output stream (including

rejects) is produced by any MRF you use? How pure are the separated streams it produces?

- How is your recycling reprocessed – for example, how much of it feeds in to ‘closed loop’ processes? If material is sold on the spot market, you may need to look back at the actual sales made over a representative period of time, or make a credible estimate based on the information you are able to obtain.
- If you send waste for incineration, how efficient is the incinerator?²⁰
- What is the gate fee for each treatment or recycling facility?
 - Do prices change depending on tonnage or a market index?
 - When are you free to exit each recycling/treatment/disposal contract?
 - Can any contract you have in place be varied and at what cost?
 - Are there any costs involved in reducing tonnage or exiting early?
- Are there any constraints (e.g. minimum or maximum tonnages you can send to a certain facility)

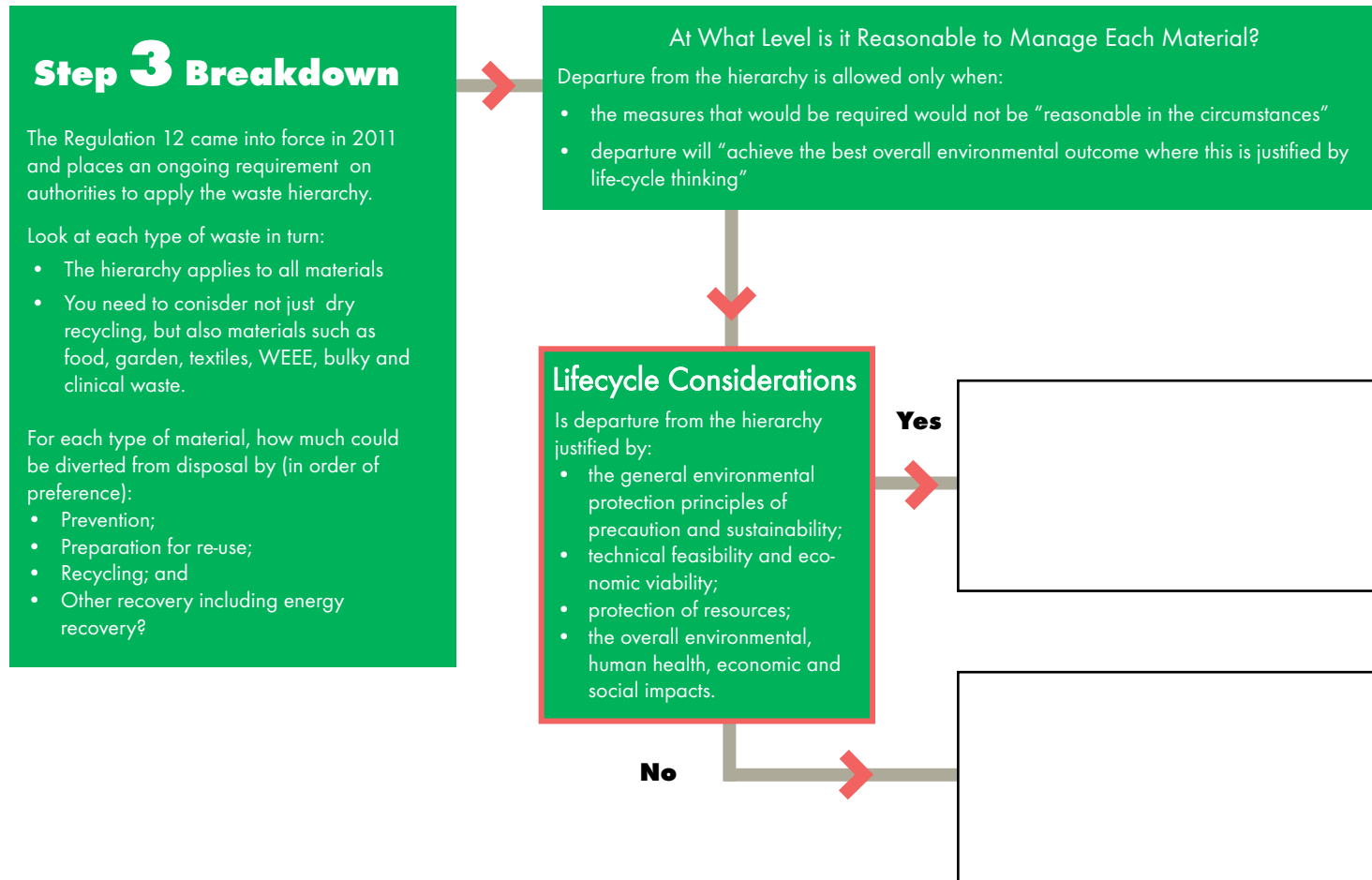
2.2 Evidence

At the end of Step 2 you should ensure you have records of:

- the tonnage of material consigned to each recycling or treatment route;
- the current recycling and reprocessing arrangements for each material collected via each collection method;
- full details of the costs of each treatment method and any income from recyclate;
- information about how much recycled material is used for open and closed loop recycling;
- any key contract documents, and records of decisions taken in the course of adopting your current waste recycling, treatment and disposal contracts; and
- if you are considering introducing or retaining a co-mingled collection, or want a clear measure of improvement arising from changes, it may be helpful to assess the environmental performance baseline of your waste and recycling management approach.

Step 3 Apply the Waste Hierarchy

The purpose of this step is to apply the waste hierarchy to the material you collect so that you can decide what you should collect for recovery (and recycling in particular).



Regulation 12 places no restriction on the types of waste to which the hierarchy should be applied.²¹

Under the Regulations you must therefore apply the waste hierarchy to each type of material you collect, whether it is currently separated for recycling, or collected as part of the residual waste stream.

Defra has produced detailed guidance on how to apply the waste hierarchy, which may be a helpful addition to this summary.²² You must decide where on the hierarchy you will manage each material. Many authorities already offer kerbside collections of materials such as food, garden waste, batteries and textiles that may meet their obligations under the hierarchy.

3.1 Which types of waste and collection are covered?

Regulation 12 requires that the following order of preference should be applied to waste management:

- **Prevention:** for many waste streams, some level of cost-effective preventative action may be possible.
- **Preparing for Re-use:** for bulky waste, textiles and WEEE, it may be possible to increase the extent to which items are cleaned, repaired, or refurbished so that they can be re-used for their original purpose.
- **Recycling:** this recovery option should be available for large amounts of the four main dry recycling materials, along with food waste

(e.g. through composting), garden waste and materials such as WEEE, batteries, mattresses and textiles.

- **Other recovery:** Defra categorises anaerobic digestion as “other recovery”²³ although the European Commission has indicated it may qualify as recycling.²⁴ Some materials such as rubble and soil may be suitable for use in applications such as restoration of landfill sites. It also includes energy recovery. Some materials for which recycling is not “reasonable in the circumstances” may be suitable for energy recovery – although lifecycle thinking may show that the environmental impacts of landfilling some fossil-fuel based materials may be lower than incineration with energy recovery.²⁵
- **Disposal:** some wastes, including some inert wastes and hazardous materials unsuitable for energy recovery, may require disposal. Processes such as Mechanical and Biological Treatment (MBT) can help to recover some material from residual waste for recovery, and to reduce the amount that has to be disposed of.

Defra’s guidance on the waste hierarchy may assist in identifying which materials can be managed at which level.²⁶ It may be helpful to think first about the steps that could be taken to achieve the highest levels of the hierarchy, before considering whether it would be “reasonable in the circumstances” to manage waste at that level.

3.2 Assessing what is reasonable

Although compliance with the hierarchy is not optional, departure from it is allowed when the measures that would be required would not be “reasonable in the circumstances”, or where departure will “achieve the best overall environmental outcome where this is justified by life-cycle thinking on the overall impacts of the generation and management of the waste”. When considering the ‘overall impacts’ the following must be taken into account:

- the general environmental protection principles of precaution and sustainability;
- technical feasibility and economic viability;
- protection of resources; and
- the overall environmental, human health, economic and social impacts.²⁷

In practice, moving less widely recycled materials (those other than glass, metal, paper, plastic and perhaps food) up the hierarchy may in many cases necessitate collecting it separately from residual waste – and often from all other materials.

There is a clear parallel between the justifications for departure from the requirements of the waste hierarchy and the Practicability Test that must be applied to the separate collection of the four materials. Indeed, Article 10 of the WFD, which has not been directly transposed into the Regulations, states that the Necessity and Practicability Tests should be applied to the separate collection of any

material.²⁸

However, the two tests are distinct from one another. The Practicability Test does not address all of the considerations listed in Regulation 12, such as human health and social impacts. Consequently, some additional assessment, beyond what the Practicability Test encompasses, would always be required to ensure that all of the relevant factors identified in relation to the waste hierarchy had been accounted for. The Practicability Test is explored in detail in Step 4.

The wording of Article 4 of the WFD is also relevant to the interpretation of the waste hierarchy. As well

as considering what may justify departure from the waste hierarchy, Article 4(2) explains that when applying the waste hierarchy you should “take measures to encourage the options that deliver the best overall environmental outcome.” The best environmental outcome, perhaps identified through lifecycle thinking, may therefore be a relevant consideration in deciding what approach to recycling should be adopted – not just in deciding whether downward departure from the hierarchy is allowable.

3.3 Evidence

At the end of Step 3 you should ensure you have

records of:

- your proposed approach to managing each material;
- your rationale for your choices regarding each material, balancing costs, benefits and impacts; and
- how deviations from the waste hierarchy are justified by lifecycle thinking in line with Regulation 12(3).

Lifecycle Thinking

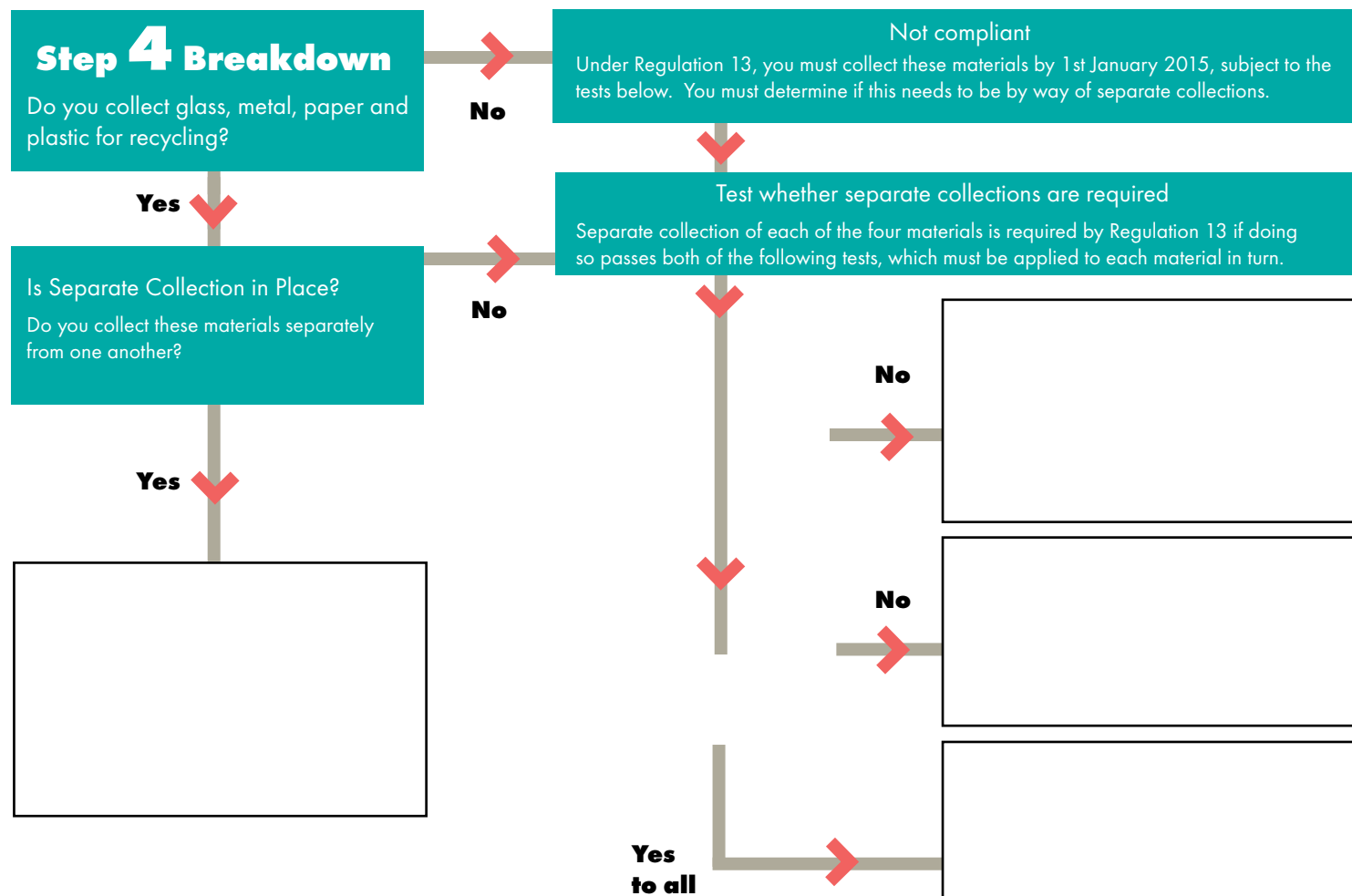
Lifecycle thinking looks at an entire product or activity system to evaluate its impact on the environment. However, in the context of waste collection, “assessments typically focus on a comparison of various waste management options, rather than covering the entire life-cycle of the products which have become waste.”²⁹ However, the environmental benefit of the ultimate use to which recyclable material is put is a relevant factor. For waste treatment and recycling technologies, an examination of impacts such as air quality and greenhouse gas emissions may be considered to be most important. Impacts of pollution to water and soil can be difficult to assess due to a lack of high-quality data. Non-environmental criteria are also important, including the financial cost of each option and issues such as the inherent flexibility of the technology with regards to change, such as a reduction in residual waste arisings.

The EC Guidance on the WFD mentions Life Cycle Assessment (LCA), Cost-Benefit Analysis (CBA), Life Cycle Costing (LCC), and Social LCA (S-LCA) as decision support methods that may be applicable.³⁰ Information regarding tools you can use to undertake the key aspects of lifecycle thinking is provided in Appendix A4.0. Note that the EC Guidance also states that lifecycle thinking need not be conducted using one of the suggested decision support methods.³¹ However, you will need to ensure that, if you propose to use lifecycle thinking to justify departing from the hierarchy, any approach you adopt takes account of all four of the bullet points in Regulation 12(3).

Step 4

Decide Whether Separate Collection of the Four Materials is Required

The purpose of this step is for you to decide whether you need to collect the four materials (glass, metal, paper and plastic) separately from one another.



The four materials are subject to special requirements under the Regulations, in addition to the general waste hierarchy requirements explained in Step 3. Applying the waste hierarchy, the most appropriate form of recovery for the four materials is likely to be recycling, although you should also consider measures to prevent waste.

If you wish to consider co-mingled collection of any of the four materials, you will need to compare this approach with the default option of separate collection. This may entail undertaking an appraisal of different collection options in order to select the most effective.

- From 1 January 2015, as an organisation that collects the four materials (even if they are currently collected in with residual waste) you must have in place systems to collect them separately from residual waste, unless doing

The Four Materials

In the Regulations the four materials are simply described as glass, metal, paper and plastic.³² The obligation therefore goes wider than metal cans, plastic bottles, and glass packaging. You may wish to consider materials such as scrap metal; all rigid plastics; plastic film; and non-container glass such as Pyrex – although after consideration, you might decide that currently these less widely recycled elements of the wider waste stream cannot practicably be separately collected for recycling.

so fails to meet the Necessity and Practicability tests.³³ However, with so many authorities already collecting these materials for recycling, it may be difficult to argue that the tests are not met in this regard.

- The more pressing issue for most councils will be whether the four materials must be collected separately from one another.³⁴ The default requirement is to collect the four materials separately: co-mingling is allowed only where separate collection is either not necessary or not practicable.

Whilst the requirements only take effect from January 2015, it is possible that councils entering into collection or disposal contracts prior to that date which will make it difficult for them to comply with the law in the future may not be able to rely on factors such as costs of exiting or varying the contract as the sole justification for not complying. It may be advisable to evaluate any new contract in the light of the requirements that take effect in 2015.

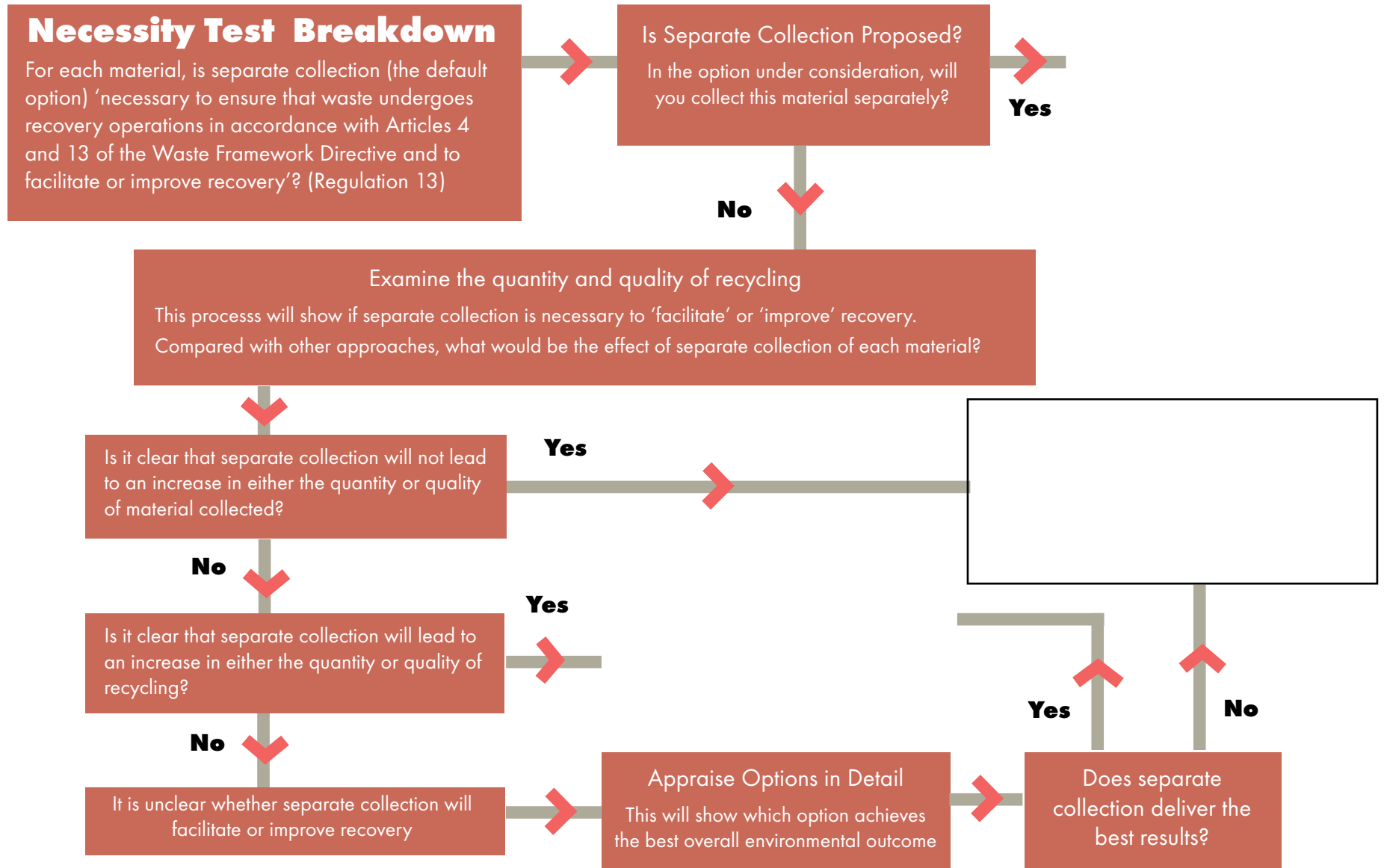
What is Separate Collection?

As well as referring to collecting material separately from residual waste, 'separate collection' means collecting material so as to keep different types separate from one another. Examples of separate collection methods include:

- kerbside sort collections, where operatives sort recycling onto multi-compartment vehicles;
- collections using splitback vehicles to provide separate chambers for different materials;
- a separate vehicle pass for each material (as used widely across the EU); and
- bring banks and bins at household waste and recycling centres, which provide very economical forms of separate collection, but will capture less material than kerbside collections. This may not meet the obligation to move material up the hierarchy wherever it is reasonable to do so.³⁵

When evaluating a current contract or comparing a possible separate collection and co-mingled collection system, you will need to ensure that the comparison is fair and reasonable – it is not sufficient to pick one separate collection system and show that a co-mingled option performs better.

The Necessity Test



4.1 Applying the Necessity Test

Regulation 13 of the Regulations says that separate collection is required where it “is necessary to ensure that waste undergoes recovery operations in accordance with Articles 4 and 13 of the Waste Framework Directive and to facilitate or improve recovery”.

The two references to WFD articles do have some bearing on the interpretation of the requirement:

- The reference to Article 4 means that the approach taken must fit the waste hierarchy.
- The reference to Article 13 means that the method of recovery must meet the requirement to protect human health and the environment.

However, the core of the test is whether separate collection is necessary to “facilitate or improve” recovery.

If separate collection is necessary either to facilitate or improve recovery, it follows that the Necessity Test is passed. However, if both of these aims can be achieved just as well with one or more streams of material collected co-mingled, separate collection is not necessary. It is possible that it will not be immediately clear which option gives the best results: whether separate collection would “facilitate or improve” recovery compared with other collection methods. If this is the case, you may need to undertake a more detailed options appraisal (which may incorporate elements of life cycle thinking) to decide whether separate collection

“Facilitate or Improve”

There is no definition of either “facilitate” or “improve” given in the WFD, Regulations or guidance document. However, authorities may want to consider the following.

- “Facilitate” means to make possible or easier. If a measure “facilitates” recovery, it might be expected to result in the amount of material recovered rather than sent for disposal being increased.
- Recovery is “improved” if it achieves better results. Recovery may therefore be “improved” if:
 - more waste is recycled rather than subject to other recovery; and/or
 - more of the recycling is “high quality”.

Whilst Regulation 13 does not make explicit reference to the idea of “high quality” recycling, this concept seems critical to an understanding of what it means to “improve” recovery – although it cannot be said that to increase “high quality” recycling and to “improve recovery” have exactly the same meaning. However, immediately before it introduces the requirement to separately collect the four materials, Article 11(1) of the WFD makes it clear that quality is the underlying motivation for this measure:

“Member States shall take measures to promote high quality recycling and, to this end, shall set up separate collections of waste where technically, environmentally and economically practicable and appropriate to meet the necessary quality standards for the relevant recycling sectors.”

In this context, measures to increase high quality recycling and to improve recovery may often have similar outcomes.

facilitates or improves recovery, and whether it therefore meets the Necessity Test.

Many local authorities will have previously carried out options appraisals when deciding on their approach to waste management, looking at the costs of different systems and the environmental outcomes that would be achieved. Remember that collection of the four materials is subject to the waste hierarchy discussed in Step 3: Article 4(2) of the WFD states that when applying the hierarchy

you should “take measures to encourage the options that deliver the best overall environmental outcome.”

Where materials can be effectively separated without harming their ability to be recycled back into similar products, it may not be necessary to collect them separately. It is commonly stated that plastic and cans are a good example of materials that can be easily co-mingled and sorted for recycling, but if you decide that it is not necessary to

“High Quality Recycling”

Whilst “high quality recycling” is not mentioned in Regulations 12 and 13, Defra’s Waste Management Plan for England, to which local authorities should have regard, states that “in effect” the Regulations “require the separate collection of waste paper, metal, plastic and glass from 2015 onwards wherever separate collection is necessary to get high quality recycling, and practicable.”³⁶ The plan is a requirement of Regulation 7, and is the principal way in which Article 10 of the WFD has been transposed.

There is no simple definition of “high quality” recycling. Article 11 of the WFD indicates that “high quality” relates to “the necessary quality standards for the relevant recycling sectors”. Some have argued that any material that is recycled must of necessity meet the standards of some part or other of the recycling sector. Therefore, all recycling is high quality – only if recyclate is so poor that it cannot be recycled at all would it fail to qualify.

Section 4.3.4 of the EU guidance on the WFD relates “high quality” to the standards achieved through separate collection, indicating that separate collection may not be necessary if co-mingled collection can deliver material of the same or similar quality.

On this understanding, one way to assess whether a collection method yields recycling that is “high quality” recycling is to consider whether the material which is collected can be used in the same ways and with the same environmental benefits as separately collected material. Examples of measures you might consider would include:

- Could a similar proportion of glass from co-mingled collection be recycled in re-melt applications, rather than being used as aggregate?
- Could a similar proportion of plastic be separated into different polymers and recycled to produce, for example, new food and drink containers?
- Could a similar proportion of news and pams be used to produce fresh newsprint or other high-grade paper products?

A hallmark of high quality on this approach is that material can be reprocessed back into a product of similar quality to what it was originally – what is known as ‘closed loop’ recycling.

collect them separately in your particular case, you will need to collect evidence to demonstrate that co-mingling them allows for high quality recycling in your area.

Another pair of materials that may be argued to be able to be collected co-mingled without impeding their ability to be recycled is food and garden waste. However, mixing them may limit the reprocessing options available, or create challenges regarding containment and collection method.

It is not considered acceptable to mix food waste with dry recycling.³⁷

Particular issues have been raised regarding the inclusion of glass waste within a dry recycling mix, and if you propose to co-mingle these materials, you will need very strong evidence that you are able to deliver high quality recycling if you wish to argue that separate collection of glass is not necessary.

Separate collection of a material may not just facilitate or improve its own recovery, but can also have a positive effect on the quality of the materials from which it is separated.

Note that the Necessity Test concerns the recycling potential of the material you collect. When carrying it out, it may be advisable to leave aside practical considerations regarding the actual facilities to which materials might be delivered, which will become relevant in the Practicability Test. Even if, for example, you consider it likely that paper you collect separately might need to be delivered to the same paper mill, and be used to produce the same

grade of paper as it would be if collected co-mingled, this does not affect whether the separate collection is in principle necessary to “facilitate or improve” recovery.

Remember, a low MRF reject rate is not a measure of high quality. Reject rates vary depending on factors such as the quality of inputs, and the degree of cross contamination between streams. Low rejects may indicate that the MRF does not sort materials well, unless it can also be shown that the sorted recycling has a high standard of purity. The key consideration is how much of the material is used for high quality recycling.

You may need to consider whether any of the four materials includes sub-types that it may be necessary to collect separately from one another (e.g. paper and card, different plastic polymers) in order to facilitate or improve recovery by increasing the amount of high quality recycling.

4.1.1 Evidence

At the end of the Necessity Test, you should ensure you have records supporting any assessment you have made of different collection and treatment or recycling methods:

- details for each option of how much material is subject to disposal, recycling and other recovery;
- a statement and supporting arguments for each material regarding whether separate collection is necessary in order to facilitate or improve

recovery, and if not, which materials it can be collected co-mingled with whilst securing this aim;

- if use of a MRF is required for any options you are considering, MRF Regulation³⁸ sampling records or other evidence regarding the quality of its outputs;
- details of the outputs from any secondary sorting facilities; and
- end destinations of the material collected under the options considered, and the quality of recycling expected to be achieved.

The Practicability Test

Practicability (TEEP) Test Breakdown

Is separate collection technically, environmentally and economically practicable? (Regulation 13)

Are you planning to collect the four materials separately

Yes

Likely to be Compliant

If you plan to collect the materials separately, you do not have to apply the Practicability test. However, you may still wish to do so to be assured that your collection system delivers the best overall outcome.

No

Is separate collection of each material:

Technically Practicable?

Questions to consider include:

- Have you previously collected the material separately?
- Is separate collection used by any authority with similar relevant characteristics?
- Does your area have unusual characteristics that make separate collection impracticable?

Environmentally Practicable?

Questions to consider include:

- Would separate collection for recycling achieve a net environmental benefit?
- Does an alternative collection approach yield a better environmental outcome?
- You may want to consider CO₂ emissions, air pollution, water pollution, noise etc.

Economically Practicable?

Questions to consider include:

- Would separate collection result in excessive costs in comparison with alternatives?
- Are any extra costs proportionate to the environmental benefits?
- Be careful about how you account for contract termination or amendment costs.

No

Does separate collection pass all three elements of the test?

Yes

4.2 Applying the Practicability Test

Where it meets the Necessity Test, separate collection is required only if it “is technically, environmentally and economically practicable” (TEEP). If there are any materials that your analysis indicates it is necessary to collect separately, but which you propose to collect co-mingled, this will only be allowable if you can demonstrate that separate collection is not practicable. Even where the Necessity Test is not met, you may wish to consider undertaking the Practicability Test to ensure that you have the strongest evidence to show that you have considered all of the circumstances to demonstrate clear compliance.

For something not to be practicable is a ‘high hurdle’.³⁹ It isn’t the same as it being difficult or inconvenient.⁴⁰ For separate collection to be ruled out on practicability grounds, you may need to demonstrate that there are substantial obstacles that cannot be overcome.

However, separate collection must meet all three elements of the Practicability Test to be required. If it fails any one of them, co-mingled collection of the material(s) is permissible. If no collection system was found to be practicable, collection of material for recycling would not be required. In evaluating collection systems, you may be able to identify quickly which, if any, of the criteria separate collection of a certain material is most likely to fail. To ensure the effort expended is proportionate, it may be worth focusing attention on these aspects of the Practicability Test.

“Technically Practicable”

The European Commission guidance on the WFD says that “‘Technically practicable’ means that the separate collection may be implemented through a system which has been technically developed and proven to function in practice.”⁴¹ In order to establish whether separate collection is likely to be technically practicable for your area, you should establish whether separate collection systems have previously been developed and proven to function in practice in an authority with similar relevant characteristics. One factor to consider is whether you currently operate, or have in the past operated, a kerbside sort system covering most or all of the four materials.

A point of comparison regarding whether separate collection is technically practicable is whether there are any households that you have decided you cannot provide with a waste collection under Section 45(1) of the Environmental Protection Act 1990:

“It shall be the duty of each waste collection authority—

(a) to arrange for the collection of household waste in its area except waste—

(i) which is situated at a place which in the opinion of the authority is so isolated or inaccessible that the cost of collecting it would be unreasonably high”

Note that there is an interplay between technical and economic practicability. If the main difficulty is that the households in question are inaccessible to any separate collection method, this is likely to be an issue of technical practicability. If the issue is that the households are so remote that separate collections would be disproportionately expensive, this may be an issue of economic practicability.

Kerbside sort systems have been implemented in sparse rural areas such as Gwynedd, Wales and dense urban environments in inner London. The presence of such areas within an authority’s boundaries may not be sufficient reason to deem separate collection by this method not to be practicable. You could consider providing bring banks for use in areas that are particularly difficult to access.

The material collected through separate collection would also have to be technically capable of being recycled. The range of materials that can be recycled is growing, and some investigation of recycling options would be needed to support a conclusion that, for example, due to a lack of available processing capacity it is only technically practicable to collect plastic bottles, not other plastics. If processing capacity is available, but not cost effective, this would be an issue of economic practicability.

The EU Guidance on the WFD gives the following explanation of the Practicability Test:

“‘Technically practicable’ means that the separate collection may be implemented through a system which has been technically developed and proven to function in practice. ‘Environmentally practicable’ should be understood such that the added value of ecological benefits justify possible negative environmental effects of the separate collection (e.g. additional emissions from transport). ‘Economically practicable’ refers to a separate collection which does not cause excessive costs in comparison with the treatment of a non-separated waste stream, considering the added value of recovery and recycling and the principle of proportionality.”⁴²

Interpretation of this guidance is considered in more detail in this section.

The Practicability Test needs to be carried out using reasonable estimates of how separate collection would perform and what it would cost. In order to ensure that **the comparison is reasonable, the options should reflect well-performing, ‘optimised’ schemes using up to date vehicles and appropriate levels of staffing.**

In order to ensure that a reasonable comparison is made, performance should be compared with what separate collection can achieve under a suitable package of local policies (e.g. as regards container size and collection frequency).

If it appears that separate collection may pose particular difficulties in some parts of your area, **you**

may need to consider whether separate collection might be practicable for the majority, even if alternative arrangements would need to be made for some.

The preference of householders or businesses for different collection systems is not a factor that fits readily within the considerations that the Practicability Test takes into account. However, if implementing service changes, best practice should be followed in communicating these to residents in order to maximise the likelihood of successful service implementation.

The environmental element of the Practicability Test must also be a fair comparison, looking at equivalent parts of different systems under consideration. For example, in addition to the impacts of the collection process, it must take account of the transport emissions related to haulage of materials after they have been collected and the energy used by any MRF that is needed to sort co-mingled materials, as well as taking account of MRF loss rates. Finally, the greenhouse gas savings associated with the specific uses envisaged for the materials should be accounted for – these are likely to be greater for “high quality” recycling (e.g. remelt glass applications will avoid more greenhouse gas emissions than will the use of waste glass as aggregate).

Remember, the Practicability Test will need to be applied to separate collection of any waste stream where the four materials are collected and the Necessity Test is met – even if collection is at

present within the residual stream. This includes any commercial waste you collect, or that is collected on your behalf. Only if the Practicability Test is not met will it be permissible to collect commercial waste co-mingled. If you are concerned that adopting separate collection may make your commercial waste service less competitive, bear in mind that all

“Environmentally Practicable”

The European Commission guidance on the WFD says that “‘Environmentally practicable’ should be understood such that the added value of ecological benefits justify possible negative environmental effects of the separate collection (e.g. additional emissions from transport).”⁴³ A system will therefore be environmentally practicable if the benefits from increased or improved recycling outweigh any negative impacts.

A number of tools are available to local authorities to enable them to assess the environmental benefits and impacts of collections, some of which are mentioned in Appendix 4.0 Such tools may help to provide clear evidence regarding which option leads to the greatest environmental benefit.

Whilst the default option is separate collection, if co-mingled collection seems to lead to substantially better environmental performance overall, this may be evidence that it is permissible.

commercial waste collectors are subject to the same rules, and that your competitors must also comply with the law.

Undertaking the Practicability Test may not be straightforward. It is likely to need to rely on solid information about the costs and benefits of different possible collection systems, expertise regarding how technical challenges to separate collection could be overcome, and use of analytical techniques to understand the environmental impact of different systems.

A Waste Collection Authority (WCA) can be directed by a Waste Disposal Authority (WDA) regarding where and in what form it must deliver the waste and recycling it collects.⁴⁴ A direction from a WDA is legally binding, and a WCA that follows a direction from its WDA to deliver co-mingled recycling may have a strong argument that it cannot collect recycling separately. This argument may apply even if the WDA's direction cannot be shown clearly to make separate collections on the part of the WCA technically or economically impracticable. However, the WDA may need to carefully consider whether, in making such a direction, it would be fully compliant with its obligations under the Regulations, especially as regards the waste hierarchy.

4.2.1 Evidence

At the end of the Practicability Test you should ensure you have records of:

- a statement and supporting arguments for each material where separate collection has been

"Economically Practicable"

The European Commission guidance on the WFD says that "'Economically practicable' refers to a separate collection which does not cause excessive costs in comparison with the treatment [including recycling] of a non-separated [co-mingled or residual] waste stream, considering the added value of recovery and recycling and the principle of proportionality."⁴⁵

Naturally, many hard-pressed authorities will be concerned about whether separate collection will be more expensive than co-mingled. In deciding what the cost of different options might be, it will be important to take account of all of the relevant financial impacts – not just the collection costs such as vehicles, crew, fuel, containers, but the likely income from materials, processing costs and haulage costs. It should not be assumed that separate collection will be more expensive than co-mingled – this is an open question, which is likely to need to be considered on a case by case basis.

In any event, 'economically practicable' does not mean 'the cheapest option'. Separate collection will be economically practicable so long as the cost is not excessive, or disproportionate to the benefits. Except where any extra costs of separate collection are very small or very large, assessing 'proportionality' is not straightforward. It may not be sufficient to show, for example, that the extra costs would marginally exceed the current waste budget. It may even be proportionate to consider cuts to other discretionary expenditure in order to meet the legal obligations regarding separate waste collection.

Authorities that have entered into long-term waste collection or disposal contracts that make it difficult for them to implement separate collections, especially if they have done so since the Regulations were implemented in 2011, will need to consider carefully how to take account of any constraints or termination costs associated with the contract. Termination or variation costs might be looked at separately from the basic economic case for the choice between separate and co-mingled collections.

- found to meet the Necessity Test, and which you wish to consider collecting co-mingled, whether separate collection meets the Practicability Test;
- data that has been used to back up the assessment you have made of practicability; and
- any key sensitivities which, if they changed, could alter the outcome of the Practicability Test.

Step 5 Obtain Sign-off

The purpose of this step is for you to ensure that you obtain appropriate sign-off for your decisions.

5.1 What sign off is likely to be required?

Once you have carried out your assessment and decided which materials you will collect for recycling, and which (if any) you will collect separately, **you will need to obtain sign off at the right level.**

- You may wish to obtain a peer review of work carried out to assess your compliance.
- You will need explicit sign-off from senior officers including:
 - Head of service for waste and recycling; and
 - Head of legal.
- It is also likely that the decisions taken will need to be reviewed by the council committee or member with lead responsibility for waste.
- If the assessment indicates that substantial changes to the authority's collection method are required, especially if there will be costs associated with the change, the minuted agreement of full council may be required.

5.2 Evidence

At the end of Step 5, you should ensure you have records of:

- your assessment of the sign-off process you need to go through; and
- all sign-offs obtained.

Step 6 Retain Evidence

The purpose of this step is to check that you have retained all of the evidence needed to demonstrate the rationale for your decision.

Once you have decided on your course of action, you should check that you have retained all of the evidence needed to demonstrate the rationale underlying it. Key evidence is summarised below.

6.1 Current waste collections

- The compositional analysis relied upon in your work, and how it was derived (e.g. from national figures, or a local survey).
- A description of your collection method(s), the costs and any income.
- Analysis of how much material of each type is collected through each method.
- Any key contract documents, any costs associated with varying or ending these contracts, and records of decisions taken in the course of adopting your current collection system.

6.2 Current waste treatment and recycling processing

- The tonnage of material consigned to each recycling or treatment route.
- The current recycling and reprocessing arrangements for each material collected via each collection method.
- Any MRF or other separation facility that is used for recycling.
- Full details of the gate fee for each treatment method and recycling facility.
- Information about how much recycled material is used for open and closed loop recycling.
- Any key contract documents, and records of decisions taken in the course of adopting your current waste recycling, treatment and disposal contracts.

If you are considering introducing or retaining a co-mingled collection, or want a clear measure of improvement arising from changes, it may be helpful to assess the environmental performance baseline of your waste and recycling management approach.

6.3 Applying the waste hierarchy

- Your proposed approach to managing each material.
- Your rationale for your choices regarding each material, balancing costs, benefits and impacts.
- Deviations from the waste hierarchy are justified by lifecycle thinking in line with Regulation 12(3).

6.4 The Four Materials – Necessity and Practicability

Necessity

- Details for each option of how much material is subject to disposal, recycling and other recovery.
- A statement and supporting arguments for each material regarding whether separate collection is necessary in order to facilitate or improve recovery, and if not, which materials it can be collected co-mingled with whilst securing this aim.
- If use of a MRF is required for any options you are considering, MRF Regulation⁴⁶ sampling records or other evidence regarding the quality of its outputs.
- Details of the outputs from any secondary sorting facilities.
- End destinations of the material collected under the options considered, and the quality of recycling expected to be achieved.

Practicability

- A statement and supporting arguments for each material where separate collection has been found to meet the Necessity Test, and which you wish to consider collecting co-mingled, whether separate collection meets the Practicability Test.
- Data that has been used to back up the assessment you have made of practicability.
- Any key sensitivities which, if they changed, could alter the outcome of the Practicability Test.

6.5 Sign-off

- Your assessment of the sign-off process you need to go through.
- All sign-offs obtained.

Step 7

Re-evaluation Process

The purpose of this step is to ensure that you have a process in place to re-evaluate your position to ensure continuing compliance.

As the process described above makes clear, **assessing whether you comply with the law is not a “once and for all” task**. The results of the tests that must be carried out depend on factors such as:

- the availability of recycling techniques and accessible facilities for materials that are currently difficult to recycle;
- the cost of vehicles;
- The cost of staff; and
- recycle values and the costs of energy recovery or disposal.
- The end of your collection contract.
- The end of your disposal/treatment/recycling contract, or (if waste is directed by your WDA) when new disposal/treatment/recycling arrangements are put in place that affect the waste you are able to deliver to the WDA.
- The end of the useful life of your current fleet.

You may wish to put in place regular reviews so that you can demonstrate that you have a method in place to ensure ongoing compliance.

If any of these factors changes to an extent that might influence the outcome of the tests, it may be necessary to repeat the assessment.

If the principal factor that has influenced your decision regarding the collection method to be employed is the prohibitive cost of exiting a current collection or recycling/treatment/disposal contract, or the costs of updating and/or replacing your current fleet and containers, you may need to undertake a further review when any of the following is in prospect:

Frequently Asked Questions

1. Does the law mean residents require at least five separate bins?

The Regulations concern collection, not containment. Where separate collection is deemed necessary and practicable, it can be accomplished using methods that do not require a separate bin for each material stream. The kerbside sort system, for example, enables recycling to be collected in separate streams from one or more recycling boxes or bags per household.

2. I already collect (or plan to collect) glass, metal, paper and plastic separately, so do I need to do anything?

Whilst authorities that plan to implement or already have separate collections of these materials in place may be less likely to have their compliance questioned than those using co-mingled collections, there may be more that you need to do in order to ensure that you are fully compliant with the Regulations. For example, you will also need to review which other materials you might need to consider collecting separately for recycling in order to meet the requirements of the waste hierarchy.⁴⁷ You may want to check that your system of separate collection compares well on environmental considerations with alternatives.

3. Didn't the judicial review decision mean it's OK to co-mingle recycling?

No. The first challenge to the Regulations resulted in an amendment to the law which removed the wording "For the avoidance of doubt, co-mingled collection... is a form of separate collection."⁴⁸ It is therefore clear that co-mingled collections can only be considered where separate collection does not meet the Necessity and Practicability Tests.

The judicial review concerned two specific issues. First, it considered whether the requirement to collect the four materials separately is subject to both tests, or the Practicability Test only; and secondly it examined whether local authorities were responsible for carrying out the tests to take account for local variation or whether they should be carried out once at a national level. It concluded that the amended Regulations are correct in stating that both tests apply, and should be assessed at the local level. Therefore, in order to decide whether separate collection is required, the Necessity and Practicability Tests must be applied, based on each waste collector's particular circumstances.

4. Separate collection will be more expensive than co-mingled, so is it TEEP?

It should not be assumed that separate collection would be more expensive, and you will need to analyse the likely net costs of an efficient and well-organised separate collection system. Even if separate collection would be more expensive, taking into account any increased income from the sale of recyclates, it is only if the costs of separate collection would be excessive or disproportionate that you can conclude that it is not economically practicable.

5. Separate collection means more trucks and more fuel, so is it TEEP?

Often the vehicles used in kerbside sort systems are lighter and more fuel efficient than standard RCVs and the environmental impact of collection can therefore actually be lower. The total environmental performance of a separate collection system needs to be considered, including an assessment of any greater environmental benefits that may arise from high quality recycling.

6. My MRF has a reject rate of 2%, so is that high quality recycling?

Reject rates are not directly related to the quality of recycling. A low reject rate can simply mean that the MRF is not very effective at extracting contamination, which could indicate a relatively low quality output. A more relevant consideration is the uses to which the outputs from the MRF are put, and whether these are for the most part reprocessed back into products of similar quality to the original inputs or sent for closed-loop recycling.

7. Residents don't want a separate collection, so can it be TEEP?

The Regulations permit co-mingled collection only where separate collection is not technically, environmentally or economically practicable. The preference of householders or businesses for different collection systems is not a factor that fits readily within the considerations that the Practicability Test takes into account. If implementing service changes, best practice should be followed in communicating these to residents in order to maximise the likelihood of successful service implementation. Many local authorities successfully operate separate collections, and find that residents are happy to make use of the service.

8. Does co-mingled collection means higher recycling rates?

There is no straightforward relationship between collection method and recycling rate. The highest performing local authorities on recycling rates include some that use kerbside sort collection as well as some using co-mingled collections. Whilst some additional material is often collected through co-mingled collection, there may also be a higher level of contamination and material collected that is not ultimately recycled.

9. Do I have to separately collect if I don't think it is practicable in my area?

There are examples of successful kerbside sort collections operating in many different types of authorities. In order to make the case that separate collection is not technically practicable because of the geography or other characteristics of your area, you will need to demonstrate that your local circumstances justify not having such a collection system. This may be difficult if other, similar authorities operate separate collections.

Endnotes

1. Details of all of the documents referred to in the Route Map can be found in Appendix A4.0. A glossary of terms is provided at Appendix A5.0.
2. Environmental Protection Act 1990, S.48.
3. Article 3 of the Waste Framework Directive 2008 defines waste as “any substance or object which the holder discards or intends or is required to discard”.
4. The 2008 Waste Framework Directive replaced the previous 2006 Directive, and is therefore sometimes referred to as the ‘revised Waste Framework Directive’. However, all of the requirements discussed in this Route Map flow from the 2008 Directive.
5. Explored in Appendix A3.3.
6. Waste (England and Wales) (Amendment) Regulations 2012.
7. Waste England and Wales Regulations 2011 (as amended), Regulation 13(2) and 13(3).
8. *ibid.*, Regulation 13(4).
9. *UK Recyclate Ltd and Others v Secretary of State for Environment, Food and Rural Affairs and Welsh Ministers*, Royal Court of Justice, Case No. CO/6117/2011, e.g. paragraphs 45,50 and 51.
10. See *Council of Civil Service Unions v Minister for the Civil Service* (1985) AC 374, p16 where Diplock LJ explained “one can conveniently classify under three heads the grounds upon which administrative action is subject to control by judicial review. The first ground I would call “illegality,” the second “irrationality” and the third “procedural impropriety.”” Proper application of a rational process would seem to reduce the prospect that any of these grounds would apply.
11. Waste (England and Wales) Regulations (as amended), Regulation 13(4).
12. WFD, Article 3(15).
13. *ibid.*, Article 11(1).
14. *ibid.*, Article 11(2).
15. Waste (England and Wales) Regulations (as amended), Regulation 37.
16. Waste (England and Wales) Regulations (as amended), Regulation 12(1).
17. WFD, Article 3 (10).
18. One example of such data is Defra’s Municipal Waste Composition: Review of Municipal Waste Component Analyses (2009), which can be downloaded from <http://randd.defra.gov.uk/Default.aspx?Module=More&Location=None&ProjectID=15133>.
19. Regulation 14 of the Waste (England and Wales) Regulations (as amended) states that “An establishment or undertaking which collects, transports or receives waste paper, metal, plastic or glass must, from 1st January 2015, take all such measures available to it in that capacity as are reasonable in the circumstances to ensure that where that waste has been separately collected it is not mixed with other waste or other material with different properties”.
20. You may wish to review Defra’s Energy from Waste – A Guide to the Debate (revised edition) regarding questions to ask regarding the performance of incinerators.
21. Waste (England and Wales) Regulations (as amended), Regulation 12(1).
22. Defra, Guidance on Applying the Waste Hierarchy, June 2011, available from www.gov.uk/government/publications/guidance-on-applying-the-waste-hierarchy.
23. *Ibid.*, p3.
24. European Commission, Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste, June 2012, p32 footnote 1.
25. Defra, Energy from Waste – A Guide to the Debate (revised edition), February 2014, p59-62.
26. Defra, Guidance on Applying the Waste Hierarchy, June 2011.
27. Waste (England and Wales) Regulations (as amended), Regulation 12(3).
28. WFD, Article 10(2).

29. European Commission, Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste, June 2012, Section 3.6, p51.
30. *ibid.*, Section 3.5, p51.
31. *ibid.*, Section 3.5, p51.
32. Waste (England and Wales) Regulations (as amended), Regulation 13(2).
33. *ibid.*
34. European Commission, Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste, June 2012, Section 4.3.4, p55.
35. Waste (England and Wales) Regulations (as amended), Regulation 12(1).
36. Defra, Waste Management Plan for England, December 2013, p22.
37. European Commission, Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste, June 2012, Section 4.3.4, p55.
38. See the schedule to The Environmental Permitting (England and Wales) (Amendment) Regulations 2014.
39. Defra, Letter to Local Authority Bodies on the Separate Collection of Waste Paper, Metal, Glass and Plastic, October 2013, p2. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/250013/waste-seperate-collection-201310.pdf.
40. Compare UK Recyclate Ltd and Others v Secretary of State for Environment, Food and Rural Affairs and Welsh Ministers, Royal Court of Justice, Case No. CO/6117/2011, paragraph 18.
41. European Commission, Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste, June 2012, Section 4.4, p57.
42. *ibid.*
43. *ibid.*
44. Environmental Protection Act 1990, S.48.
45. European Commission, Guidelines on the interpretation of key provisions of Directive 2008/98/EC on waste, June 2012, Section 4.4, p57.
46. See the schedule to The Environmental Permitting (England and Wales) (Amendment) Regulations 2014.
47. Waste (England and Wales) Regulations 2011 (as amended), Regulation 12.
48. Waste (England and Wales) Regulations 2011, Regulation 13.

This document was prepared on behalf of a working group comprising members of local authority waste networks (coordinated through the Waste Network Chairs), the London Waste and Recycling Board (LWARB) and WRAP.



The Waste Network Chairs comprises representation from the following national and regional waste networks:



The document was prepared by Eunomia Research & Consulting

