Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

End-of-Waste — Guidance Document

Part 2: Preparing an End-of-Waste Application

ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency (EPA) is responsible for protecting and improving the environment as a valuable asset for the people of Ireland. We are committed to protecting people and the environment from the harmful effects of radiation and pollution.

The work of the EPA can be divided into three main areas:

Regulation: *We implement effective regulation and environmental compliance systems to deliver good environmental outcomes and target those who don't comply.*

Knowledge: *We provide high quality, targeted and timely environmental data, information and assessment to inform decision making at all levels.*

Advocacy: *We work with others to advocate for a clean, productive and well protected environment and for sustainable environmental behaviour.*

Our Responsibilities

Licensing

We regulate the following activities so that they do not endanger human health or harm the environment:

- waste facilities (*e.g. landfills, incinerators, waste transfer stations*);
- large scale industrial activities (*e.g. pharmaceutical, cement manufacturing, power plants*);
- intensive agriculture (*e.g. pigs, poultry*);
- the contained use and controlled release of Genetically Modified Organisms (*GMOs*);
- sources of ionising radiation (*e.g. x-ray and radiotherapy equipment, industrial sources*);
- large petrol storage facilities;
- waste water discharges;
- dumping at sea activities.

National Environmental Enforcement

- Conducting an annual programme of audits and inspections of EPA licensed facilities.
- Overseeing local authorities' environmental protection responsibilities.
- Supervising the supply of drinking water by public water suppliers.
- Working with local authorities and other agencies to tackle environmental crime by coordinating a national enforcement network, targeting offenders and overseeing remediation.
- Enforcing Regulations such as Waste Electrical and Electronic Equipment (WEEE), Restriction of Hazardous Substances (RoHS) and substances that deplete the ozone layer.
- Prosecuting those who flout environmental law and damage the environment.

Water Management

- Monitoring and reporting on the quality of rivers, lakes, transitional and coastal waters of Ireland and groundwaters; measuring water levels and river flows.
- National coordination and oversight of the Water Framework Directive.
- Monitoring and reporting on Bathing Water Quality.

Monitoring, Analysing and Reporting on the Environment

- Monitoring air quality and implementing the EU Clean Air for Europe (CAFÉ) Directive.
- Independent reporting to inform decision making by national and local government (*e.g. periodic reporting on the State of Ireland's Environment and Indicator Reports*).

Regulating Ireland's Greenhouse Gas Emissions

- Preparing Ireland's greenhouse gas inventories and projections.
- Implementing the Emissions Trading Directive, for over 100 of the largest producers of carbon dioxide in Ireland.

Environmental Research and Development

- Funding environmental research to identify pressures, inform policy and provide solutions in the areas of climate, water and sustainability.

Strategic Environmental Assessment

- Assessing the impact of proposed plans and programmes on the Irish environment (*e.g. major development plans*).

Radiological Protection

- Monitoring radiation levels, assessing exposure of people in Ireland to ionising radiation.
- Assisting in developing national plans for emergencies arising from nuclear accidents.
- Monitoring developments abroad relating to nuclear installations and radiological safety.
- Providing, or overseeing the provision of, specialist radiation protection services.

Guidance, Accessible Information and Education

- Providing advice and guidance to industry and the public on environmental and radiological protection topics.
- Providing timely and easily accessible environmental information to encourage public participation in environmental decision-making (*e.g. My Local Environment, Radon Maps*).
- Advising Government on matters relating to radiological safety and emergency response.
- Developing a National Hazardous Waste Management Plan to prevent and manage hazardous waste.

Awareness Raising and Behavioural Change

- Generating greater environmental awareness and influencing positive behavioural change by supporting businesses, communities and householders to become more resource efficient.
- Promoting radon testing in homes and workplaces and encouraging remediation where necessary.

Management and Structure of the EPA

The EPA is managed by a full time Board, consisting of a Director General and five Directors. The work is carried out across five Offices:

- Office of Environmental Sustainability
- Office of Environmental Enforcement
- Office of Evidence and Assessment
- Office of Radiation Protection and Environmental Monitoring
- Office of Communications and Corporate Services

The EPA is assisted by an Advisory Committee of twelve members who meet regularly to discuss issues of concern and provide advice to the Board.

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Guidance Document
Part 2 - Preparing an End-of-Waste Application

Environmental Protection Agency

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Disclaimer

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This guidance was prepared by Ricardo Energy and Environment, Kate Clark (EPA) and Caitríona Collins (EPA), with the assistance of Caroline Murphy (EPA) and Fiona Berry (EPA).

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1. Introduction to this Guidance Document

1.1 Structure

Part 1: Introducing End-of-Waste: Describing the context and benefits and introducing the end-of-waste test to potential applicants (separate document).

Part 2: Preparing an End-of-Waste Application: Providing guidance for applicants on how to address the requirements of the end-of-waste test (this document).

Please refer to Part 1 in parallel. Part 1 provides an explanation of the overall purpose of this guidance, together with an introduction to end-of-waste and review of the strategy and policy context; explanation of the end-of-waste test in law; description of approaches to establishing end-of-waste criteria; review of the decision making process; and an introduction to the 'pillars' of the end-of-waste test, which are described in further detail in this Part 2.

This Part 2 seeks to help you to compile your application in order to demonstrate that you meet the four pillars of the end-of-waste test in turn. The evidence required to prove that you meet each pillar is likely to overlap. If you have evidence that supports your application for more than one pillar of the test you can present this as a separate appendix and cross-reference this as appropriate to limit duplication. Please note that this Part 2 should be considered together with the end-of-waste application form and is intended to help you complete it.

To make an application to the Agency for a decision on end-of-waste status submit a completed application form and any supporting information to the Agency via email to article28@epa.ie.

2. BACKGROUND INFORMATION

It is first necessary to capture some general details about the applicant's business. This information will allow the Agency to understand the nature of your business, your rationale for seeking an end-of-waste decision and the overall activities undertaken from which the fully recovered material is derived. This provides a valuable context for the Agency to assess your overall application.

Your application should include background information on the material, including:

- Details of your business. Including:
  - company name and registered address;
  - address(es) of the premises at which the recovery process will take place (if different to the registered address);
  - lead contact name for the end-of-waste application;
  - summary of business activities; and
  - source(s) of the waste being treated (e.g. imported from another site(s) within or outside of the Republic of Ireland or arising at the same premises).
- Details of the relevant waste licence(s) or waste facility permit(s) or Certificates of Registration (CoRs) relating to the location(s) at which the material will be fully recovered. Note that the material will always be managed and regulated as a waste up to the point that it has been fully recovered (assuming that it has also at that point satisfied all the requirements of the end-of-waste test). Please remember to explain:
  - in relation to your site(s) at which the waste is recovered:
    - your waste acceptance criteria (including those within the waste licence(s), waste facility permit(s) or CoRs and any criteria that are additional);
    - whether the waste licence(s), waste facility permit(s) or CoRs have been subject to any variations and whether you intend to apply for any such variations; and
    - compliance history, i.e. whether the activities have been or are subject to any investigation or enforcement activities by the Agency;
  - if the waste is generated elsewhere, in relation to those sites:
    - if the waste arises at 3 or fewer locations, provide details for those sites; or
    - if the waste arises at more than 3 locations, or the locations vary (e.g. are not consistent month-to-month), describe how you select facilities from which you source waste.
- Please provide a summary of the benefits that you hope to gain from an end-of-waste decision.

3. DEMONSTRATING COMMON USE FOR A SPECIFIC PURPOSE

The first of the four 'pillars' of the end-of-waste test requires you to demonstrate that the material, once fully recovered, is commonly used for a specific purpose(s).

Your application should outline details of the 'product' that you will generate from the fully recovered waste. It should detail its current and/or intended use(s) and specification(s) that it will meet (further details required are explained in section 4).

You firstly need to explain if your fully recovered material will become a final product to be placed on the market for direct application (e.g. a secondary aggregate or fuel), or if it will be supplied as a raw material for another manufacturing process(es). This will help the Agency to consider the risks associated with the use of the material (please refer also to section 6). If the fully recovered material will be a raw material, you need to explain what that later manufacturing process(es) involves, for example your application should summarise the later manufacturing process and the ultimate market for the product(s) that is derived from the raw material that you supply.

If you have numerous or complicated use scenarios, you can describe these in your risk assessment (refer to section 6) and should cross-reference them.

Whether or not your fully recovered material will be a raw material or destined for direct application, at this stage you need to explain either:

- how the fully recovered material is already being used for the intended use(s), for example:
  - that specifications or standards are already in place and what these are;
  - the quantity of alternative primary materials that are used for the same purpose (e.g. kg per year);
  - whether you are being paid a verifiable market price for the material and how this price relates to the current market price for primary material for the same use (noting that this suggested information refers to relative price points not absolute material pricing; this is addressed further in section 4);
  - letters of support referring to the suitability of, and demand for, the material from customers or potentially a third party that has undertaken market analysis;

or

- in cases where the market does not already exist because your intended application is new, how do you intend that the fully recovered material will be used; in this case, you will need to justify your response, for example summarising outcomes of the product development process.

3.1 Storing Fully Recovered Material

The Agency cannot regulate, and does not seek to regulate, the use of a material that has ceased to be a waste. Therefore, applicants need to give the Agency absolute confidence that the material has a market and will be used. Therefore, the material will not be stockpiled with a risk of eventually reverting to being classified as a waste, with the liabilities that this entails.

The applicant should set out any requirements and controls relating to storage of the fully recovered material. Storage is acceptable only if it is necessary to facilitate the stated end use, for example in a market governed by large-scale projects (e.g. construction sector) or with cyclical or seasonal demand (e.g. agriculture).

If storage is required over and above that which the Agency considers is necessary or justifiable to facilitate the intended application, the Agency may interpret this to mean a common usage has not yet been established. If you consider that your storage requirements require further explanation, please provide further details.

4. DEMONSTRATING THAT A MARKET OR DEMAND EXISTS

If a market does not exist, or if this cannot be established with confidence, there is a risk that the material might either still be classified as waste or that it could later revert to being classified as a waste if it becomes necessary to discard the material. Avoiding this risk is important to protect human health and the environment. This guidance aims to help you to demonstrate that a market exists and is sub-divided into the following distinct but closely related elements:

- the material has been **converted into a distinct and marketable product(s**), being distinctly different to the waste such that the waste-related risks have been removed (section 4.1); and
- the material **has a sustainable market(s)**, demonstrating its value as a product (section 4.2).

4.1 Part 1: Waste is Converted into a Distinct and Marketable Product

Understanding your waste before and after treatment and recovery is important to give the Agency confidence in your application. This enables the Agency to understand how you have converted the original waste into a distinctly different and valuable product without its original waste characteristics and risks.

Therefore, your application should include details of your untreated waste, as well as the fully recovered material, and the process that you use to treat the waste. Providing a copy of your quality control procedures describing operations at your facility can help your application. If your application is successful, it would be good practice to establish these controls in your management systems to confirm that you will continue to fulfil the end-of-waste quality requirements. Whilst quality assurance schemes cannot guarantee the quality of an end product, they can assure consistency of the applied processes throughout the production chain. This will help to give the Agency confidence that you will continue to produce a consistent, distinct and marketable product.

The sources of the waste, and any processing that the waste has undergone previously, should be described as these may affect its composition and consistency. Providing detailed information on waste sources may help to reduce the need to submit further information later in the application process. For example, if you can demonstrate that you apply procedures to control the quality and variability of waste before it even reaches your site you may be able to justify reduced testing of the fully recovered material.

Ensuring that the material meets some sort of quality standard can demonstrate that it can access a specific market. All established standards for the product need to be identified and recorded. It is likely that the product will need to be tested to demonstrate compliance with the applicable quality standard. In each case the legal and geographical basis for the standard should be noted, for example, internationally agreed standards and specifications may vary by country and affect the available markets.

Data will be required to cover the following aspects. As every circumstance is different, this list is intended as a guide and you may want to supplement this information with further evidence specific to your case.

4.1.1 About the Untreated Waste

- Describe how the waste arises, including the waste source(s) or production process(es) generating the waste.
- Describe the waste and its List of Waste (European Waste Classification (EWC)) code(s)[1].
- Describe potential contamination in the input waste and whether this can impact on the output material. This is important to identify any potential hazards within the input material and whether these can be adequately controlled in some way during processing operations to ensure the required product quality.
- If you generate the waste on your premises, describe the process that generates the waste. This can include diagrams and photos to help in your explanation:
  - Raw material inputs;
  - Process flow; and
  - Waste analysis.
- If you receive waste at your premises that is imported from third parties, describe your quality control measures:
  - Your Waste Acceptance Criteria (WAC).
  - Your management systems, incoming waste inspection, rejection and testing procedures.
  - Confirmation of the source(s) of the waste, such as:
    - Where has the waste come from?;
    - What is it derived from?;
    - How does it arise?; and
    - Will you use any non-waste materials in your process as well? If so, what and how much?
  - Do you accept the waste from any potential source or only from defined or pre-determined (e.g. contracted) sources? If the latter, this can provide greater confidence in the consistency of process inputs and your level of control over them. Other details to provide include:
    - Details of the source and your waste supply chain;
    - Details of your waste supply contracts and how you enforce them;
    - You should visit the supplier site(s) and ensure you know what you are getting; and,
    - Whether you periodically audit companies in your waste supply chain e.g.:
      - their licences, permits and CoRs, including WAC (if relevant);
      - their regulatory compliance history (if relevant);
      - their management systems; and
      - details of your auditing procedures (including outcomes, frequency, responses to non-compliances).

1 "*Waste Classification. List of Waste & Determining if Waste is Hazardous or Non-hazardous. Valid from 1st June 2015*", 2015, ISBN: 978-1-84095-601-6, Environmental Protection Agency. https://www.epa.ie/pubs/reports/waste/stats/wasteclassification/EPA_Waste_Classification_2015_Web.pdf

If you require analysis of the incoming waste to be undertaken by the supplier(s), or if you undertake this yourself, you can use this to provide evidence of its consistency. You might find this useful, for example if it helps you to explain how you control the treatment process or if this reduces the need for you to analyse the fully recovered material. In this case, you should provide details of the testing undertaken and evidence that it can be relied on. More details of how you can do this are provided in section 4.1.3.

4.1.2 About your Recovery Process

Following waste being accepted at your site, you then need to provide details of the waste treatment (recovery) process. The operations undertaken to fully recover the waste (please refer to Part 1, section 2.1) should be detailed and how these remove the waste-related risks. This could be a simple one step process, for example applying cleaning or separation techniques, or simply checking (e.g. testing) waste to verify that it fulfils the end-of-waste criteria (reference Waste Framework Directive Recital 22) or it could be an extensive processing operation. Regardless of the operations, the following details should be provided:

- Process flow, including identifying the point at which you consider the material ceases to be a waste. This is where you believe that the waste is 'fully recovered';
- Description of the equipment used to process the waste and its role in the recovery process;
- Details of any non-waste products and process additives into the recovery process;
- A simple mass balance; how much waste is required to generate the product?; and
- The target output material (product) specification.

4.1.3 About the Fully Recovered Waste

A detailed analysis of the fully recovered waste ('product') is vital and should include its composition, range and variability. A sampling plan must be developed to confirm the analysis suite and its derivation. This is important so that you can demonstrate that the product can comply with the relevant product specification(s) or end user (customer) specification(s). Analysis should cover the following:

- Technical product requirements (e.g. strength, particle size distribution); and
- Composition requirements (e.g. maximum concentration of a chemical constituent).

Depending on your material, you will not only need solid and/or liquid samples but also leachate samples e.g. for aggregate use. The tests must be appropriate to the intended use of the material (e.g. with aggregate, whether the intended application is bound or unbound; refer to section 6).

To ensure that representative samples are taken, they should conform to a recognised standard, such as the relevant waste or product sampling procedures, for example:

- EN 14899:2005 (Waste materials; and supporting technical guidance CEN/TR 15310);
- EN 932-1:1997 (Aggregates);
- EN 15442:2011 (Solid recovered fuels); or
- EN 14778:2011 (Solid biofuels).

The details of the analytical laboratory should also be provided, such as its name, address and quality certification (e.g. Irish National Accreditation Board (INAB), United Kingdom Accreditation Service (UKAS), ISO/IEC 17025:2005). The analytical data should:

- Cover an appropriate timeframe of waste production (e.g. taking into account any potential variability over time);
- Include test methods and limits of detection; and
- Include statistical analysis (e.g. to describe variability) and comparison against the relevant product specification, including clear and detailed interpretation of your assessment.

Overall you should assess the data to confirm why you believe that the product is distinctly different to the waste, e.g. in terms of its properties and risks, including that it complies with the relevant product specification, such that the waste-related risks have been removed.

4.2 Part 2: Fully Recovered Waste has a Sustainable Market

The market assessment is an important aspect of the application; if there is no market and the material cannot be used beneficially then it will remain a waste. Your application must give the Agency confidence that the material will not be produced only to be stored indefinitely after the material has ceased to be regulated as a waste. You must give the Agency confidence that there will be no loss of control causing the material to ultimately revert back to a waste, requiring the storage site to be remediated.

The market assessment should be as specific as possible. You will need to know the exact use to both assess the market and to enable the risk to be assessed later in the application process (refer to section 6). If there is more than one intended market/use, you will need to provide details for each one for which you are seeking end-of-waste status.

If you intend to use the product yourself, e.g. as a raw material in a further manufacturing process, you will need to provide the details, including describing in relative terms the benefits of using the waste-derived material (e.g. the savings you will make by not using primary raw materials or how it will help generate profit, if applicable).

To show that there is a sustainable market, analysis of the intended market(s) should be provided in your application. This should include:

- Who will use the material? (Note that regulation of the recovery and use of secondary materials can vary by country, therefore the trade of certain materials between different countries may be prevented by different regulatory approaches. This should be factored into your market assessment.);
- Verify that the market exists, through providing a market analysis over a relevant timeframe (e.g. quantities of materials used and price point of materials). Consider, for example, if the market is still developing and detail likely future market trends. The Agency acknowledges that applicants are likely to consider absolute price information to be confidential and sensitive. Therefore, applicants can provide relative price information if required to demonstrate that a market exists. That is, applicants can refer to the approximate proportion of the market price that their fully recovered waste achieves (or they anticipate may achieve in future) compared to the equivalent non-waste derived materials;
- State why the market is considered to be secure and sustainable; and

- Assess factors that have affected, or that you can foresee will affect, the market. This may include:
  - market risks, such as if the market is currently temporarily incentivised; and
  - positive market indicators (with justification and sources of information referred to) for anticipated growth that will lead to increased demand for your fully recovered material, for example due to:
    - incentivised market growth;
    - an anticipated future shortage of virgin products;
    - changes to policy drivers or regulations;
    - developments in material processing technology allowing increased use of waste derived materials; and
    - changing perceptions of users.

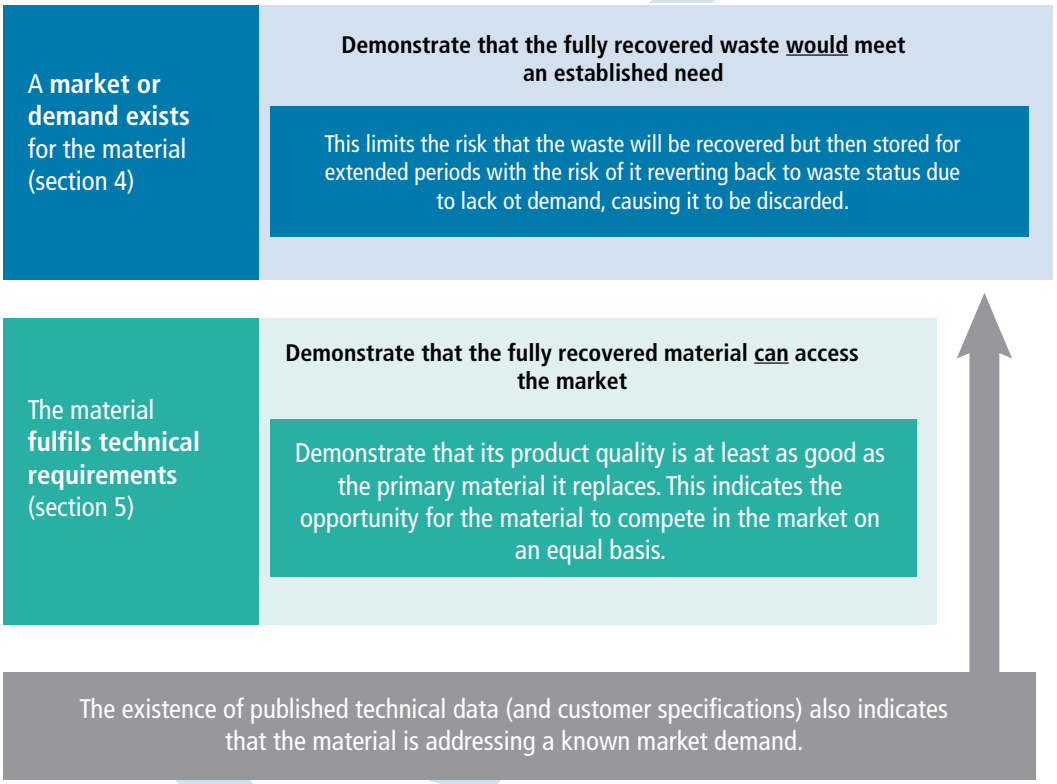
The application should also provide evidence of demand in the relevant market that you are seeking to sell into, such as:

- The amounts of competing materials used for the same purpose and the potential for substituting virgin (primary) materials;
- Evidence of sales history in the intended market, such as sale price over time and how this compares to the primary materials substituted (refer to information above concerning relative price information); and
- Customer testimonials or letters of support/intent or evidence of contracts for supply.

5. DEMONSTRATING MATERIAL FULFILS TECHNICAL REQUIREMENTS

5.1 Introduction

This pillar of the end-of-waste test links closely with the need to demonstrate that a market or demand exists (refer to section 4). By providing evidence that the fully recovered waste meets the established technical requirements relating to its intended use, you will provide a clear indication that the material can then in fact access the available market. These are two distinctive, but closely related, pillars of the end-of-waste test and fit together in the following way.



Overall, you are seeking to demonstrate that the material meets some form of appropriate quality standard meaning that it can be used in the same way as the non-waste material it replaces. To do this, you need to provide evidence that the fully recovered substance or object:

- fulfils the technical requirements for the specified use(s), which should relate to existing, published standards that are applicable to products (whether derived from virgin materials or waste) that are used for the same purpose; and
- meets the existing legislation and standard(s) applicable to products.

If you have more than one intended use for the recovered material, you need to provide details of them all, including the technical requirements (this term is used to convey all relevant standards, specifications and legislation) that relate to each use. You can also present relevant customer specifications that your material is required to meet, again for each intended use, if relevant.

The evidence that you present should establish that the material is ready for final use and that no additional waste treatment steps are needed. This helps to confirm the overriding requirement that the waste has been fully recovered.

5.2 Selecting Relevant Technical Requirements

Firstly, confirm the non-waste derived product(s) that is being replaced to guide you to select the appropriate technical requirements. Is it:

- a whole product?;
- a component of a new product?; or
- a new material and therefore not replacing anything?

Secondly, based on the product(s) being replaced, confirm the relevant product specification(s). This should be linked to the non-waste derived product being replaced where relevant. It is possible that you have developed a new product that therefore does not have any existing product specifications. This does not mean that you cannot make an end-of-waste application. In this case, you will need to demonstrate the customer specification(s) that exists and confirm there are applicable national or international technical requirement to control product quality (refer to section 5.3).

Preferably, you should identify a national or international published standard, for example an ISO standard(s) or Publicly Available Specifications (PAS) and applicable legislation that sets out the technical product requirements. These may for example include requirements relating to the composition of the material (e.g. concentration ranges for specified elements) and/or physical or engineering requirements (e.g. moisture content or strength). You will need to comply with all the requirements of the selected standard or specification and you cannot pick and choose elements.

Whether or not a published standard, specification and/or legislation is relevant, each potential application of the material is likely to have specific customer requirements defining the material characteristics. Any end-of-waste criteria must be consistent with such user requirements to ensure that the market is sustainable. Any such customer requirements cannot replace or 'water down' requirements in a published standard, specification and/or legislation and would be expected to be additional or more stringent.

You need to refer to your proposed geographical market to assess and confirm the relevance of the technical requirements to that market, that is, you need to confirm that the selected standard, specification and/or legislation is applicable to all jurisdictions that you intend to trade in. If it is not, you may want to consider reassessing what jurisdictions you trade with.

5.3 Developing Bespoke Technical Requirements

Customer specifications are bespoke technical requirements. If you seek to rely wholly or partly on customer specifications, the Agency would scrutinise these to assess whether they are sufficiently robust to ensure good product quality and control over risks to human health and the environment (linking to section 6). Good indications to the Agency that the customer specifications are robust include:

- the status of the company, companies or industry body that has developed the customer specification;

- the status of the parties that have been consulted with to develop the specification; and
- the methodology used to develop the specification, e.g. whether it is based in part on a PAS(s) and/or primary research carried out by respected organisations.

If neither a published standard, specification, legislation, nor customer specification exists with the relevant scope, for example because you have developed a new material and/or use, it may be possible for you to develop your own bespoke technical requirements. These will be based on the risks associated with the storage, transport, processing and use of your material. In this case, you need to carry out a risk assessment (section 6) in parallel with the development of your technical requirements.

The risk assessment will enable you to consider technical requirements such as the composition of the product, maximum content of impurities (concentration limits), etc., which you may then incorporate into the end-of-waste criteria to ensure the risks are sufficiently reduced or eliminated.

5.4 Providing Evidence of Compliance with Technical Requirements

You must provide evidence to demonstrate that the fully recovered waste meets the product standard, legislative requirement or specification, and any other specification comprising your technical requirements, and any differences. Differences between the technical requirements and the quantified composition or performance of your fully recovered waste can be negative (e.g. the risk of a specific contaminants being present in the waste-derived material that are not commonly found in non-waste material in which it replaces) but may also be positive (e.g. a physical characteristic of the waste derived material, such as the particle size or strength of an aggregate, is preferable to the commonly used non-waste material). Positive differences may help you to provide evidence of the benefits that using the waste-derived material will provide in comparison to primary materials.

Many published standards will define the tests that are required to demonstrate conformity and may even define the sampling requirements. In that case, you need to provide evidence, as per tests set out in the standard, that demonstrates that the material fulfils the technical requirements for the specific purpose.

Good practice for undertaking testing is described in section 4.

6. DEMONSTRATING NO OVERALL ADVERSE IMPACTS DURING USE

6.1 Introduction

Ensuring that there will not be any overall adverse impacts on human health and the environment is fundamental to any regulatory decision to grant end-of-waste status. Overall, applicants and the Agency need to consider if the product legislation, which would apply if end-of-waste status is granted, is sufficient to adequately minimise the environmental or human health impacts.

To enable a decision, it is necessary for applicants to demonstrate that the waste has been treated to remove all waste-related risks and will not cause overall adverse impacts. The Waste Framework Directive clearly establishes how the Agency needs to decide on this:

> *"Releasing recovered materials from the scope of waste legislation should not, in any event, weaken environmental or health protection."*

As such, Article 28 requires that the use of the substance or object will not lead to "*overall adverse environmental or human health impacts.*" Article 28 also specifies that the criteria for end-of-waste shall:

- include limit values for pollutants where necessary; and
- take into account any possible adverse environmental effects of the substance or object.

Importantly, the criteria of the end-of-waste test in European law and in some Member States diverges:

- Under the Waste Framework Directive (and under Article 28): no overall adverse impacts; and
- In England: no greater impact than the non-waste origin material that it will replace (the 'comparator').

The test 'no overall adverse impacts' applies in Ireland. Nonetheless, it may be helpful to consider using a comparator where published datasets are available to support your assessment. Datasets for a number of comparators (referring to materials applied to land, fuels, construction materials and animal bedding) and a 'Waste Comparator Tool' have been prepared by the Environment Agency that might be useful to support you[2]. Further information on using comparators is provided below.

6.1.1 Using a comparator

The approach set out in Article 28 allows a fully recovered waste-derived material, which can be used without causing harm to human health or the environment, to achieve non-waste status without having to substitute or be compared to a virgin 'comparator' material, i.e. there is no specific need to demonstrate that releasing the material from the waste regime would not lead to higher environmental or human health risks than the comparator material.

2 https://www.gov.uk/government/publications/defining-product-comparators-to-use-when-applying-waste-derived-materials-to-land

The Agency recognises that end-of-waste applications may benefit from consideration of a virgin, or non-waste origin, 'comparator' material. This approach may support an appropriate risk assessment and enables applicants to refer to published data for comparator materials to support their application.

Using the comparator approach allows your material to be benchmarked against existing products and market uses, which may be helpful in demonstrating no overall adverse environmental or human health impacts. A comparator can also help ascertain whether further analysis or processing of your material is required.

If a comparator is to be used, there must be an appropriate comparator material for the same end use. It is also important to be able to demonstrate that the correct comparator material has been chosen for the assessment. Factors to consider when choosing the right comparator material include:

- Is there a comparator material with the same end use, or are you supplying or using the waste derived product in a unique market?
- What material specifically are you replacing? Comparator material sub-types should be considered, for example:
  - In the case of fuels, it is not sufficient to say 'coal', rather it is necessary to look at the particular coal blend.
  - In the case of land spreading materials, it is not enough to say 'fertiliser', you need to specify what fertiliser e.g. Triple Super Phosphate.
- There should be sufficient evidence to support a comparison exercise, based on the evaluation of composition and physical characteristics of the comparator material against your waste derived material.
- You should select the comparator material with the most similar composition and physical characteristics, including relevant physical and chemical parameters which may include:
  - physical properties, such as bulk density and particle size distribution;
  - compositional analysis;
  - calorific value;
  - composition (moisture content etc.);
  - elemental analysis;
  - metals;
  - organic contaminants; and
  - others.

Once a suitable comparator material has been identified, a parallel comparison of the relevant parameters for both materials should be undertaken to highlight any differences between their physical and chemical characteristics. This comparison should refer to the relevant technical requirements, which should be common for both materials. This 'side-by-side' assessment should consider the potential impacts on the environment and human health from the end use of both materials to explain why the properties of your waste derived material will not lead to an unacceptable risk.

6.2 Undertaking an Environmental and Human Health Risk Assessment

You can complete a risk assessment to support your assessment, including when:

- There is no suitable non-waste comparator (e.g. the material will be sold into a unique market or application);
- You have multiple comparators; or
- There are potentially additional risks from your material (versus a comparator).

You may wish to use a suitably qualified advisor to support you in the development of the risk assessment. Undertaking a risk assessment can be a complicated process requiring expert knowledge and experience. This document seeks to guide you in what is required in a risk assessment; however, it should be noted that because the material types for which the Agency may receive end-of-waste applications are not limited, it is only possible to give generic guidance in this document.

A tiered assessment approach is typically used. This allows non-risks to be screened out early to prevent unnecessary further evaluation at the later stages.

- **Tier 1 – Risk screening:** Develop an outline conceptual model, identifying the source-pathway-receptor model and the presence any pollution linkages (the purpose of tier 1 is to establish whether there is any potential for unacceptable risks).
- **Tier 2 – Generic quantitative risk assessment:** Use the conceptual model and generic assessment criteria applicable to a range of scenarios, if available, to identify potentially unacceptable risks.
- **Tier 3 – Detailed quantitative risk assessment:** Requires more complex risk modelling tools and the generation of more detailed data to characterise the scenario, material and receptors under consideration.

For many end-of-waste assessments, the initial risk screening (tier 1) and generic quantitative risk assessment (tier 2) is likely to be sufficient. It will however be necessary to progress to a tier 3 assessment in more complex situations where it cannot be established in the tier 1 and tier 2 assessments that there is no significant risk. In a tiered approach, the characterisation of risk is an iterative process, which becomes more complex as conservatism and uncertainty decrease and you progress up the tiers of assessment if this is determined to be necessary. The intensity of effort in performing the assessment is therefore relative to the complexity and the likelihood of the identification of risks.

Potential risks to the environment and human health may result from the physical, chemical and biological properties of your material and its use in a specific way. Therefore, your risk assessment must consider both the application scenarios (intended end uses of the material) as well as its material characteristics.

This guidance seeks to enable you to understand and interpret the risk assessment process and results if you choose to appoint a suitably qualified advisor to undertake a risk assessment on your behalf. The information includes guidance to help you undertake a tiered risk assessment.

Other useful sources which may help you to develop your risk assessment include:

- EPA 2013 *Guidance On The Management Of Contaminated Land And Groundwater At EPA Licensed Sites* (https://www.epa.ie/pubs/advice/waste/contaminatedland/contaminatedland/);

- EPA 2007 *Code of Practice: Environmental Risk Assessment for Unregulated Waste Disposal Sites* (https://www.epa.ie/pubs/advice/waste/waste/codeofpracticeenvironmentalriskassessmentforunregulatedwastedisposalsites.html);
- Environment Agency (UK) guidance on Land Contamination: Risk Management (https://www.gov.uk/guidance/land-contamination-how-to-manage-the-risks/stage-1-risk-assessment); and
- CL:AIRE Water and Land Library (https://www.claire.co.uk/information-centre/water-and-land-library-wall).

6.2.1 Tier 1: Risk Screening

Risk screening is a process that will determine whether use of your material represents or potentially represents a risk(s) to receptors. It also identifies possible source-pathway-receptor linkages through the development of a conceptual model. It provides a preliminary or qualitative risk assessment of your material under end use scenario(s). It includes an assessment of the likelihood and magnitude of any effects of each pollutant linkage.

The **source-pathway-receptor** approach to risk assessment is recommended as a universally accepted methodology for the assessment of risks to the environment and human health and can typically be completed as a desk study. Without all three components – source-pathway-receptor – there is no pollutant linkage and therefore there can be no risk.

The following provides guidance in 4 steps to help you to undertake a tier 1 risk assessment.

- **Step 1:** Identify the potential hazards in your material
- **Step 2:** Identify your application scenarios (intended end uses of the material)
- **Step 3:** Develop a conceptual model
- **Step 4:** Summarise risks to the environment and human health to determine any likely adverse impacts

6.2.1.1 Step 1: Identify the potential hazards in your material

This step will involve **data gathering** to support your risk assessment. This is a key initial step which can be time consuming. However, this information may enable you to screen out risks, so should be undertaken at an early stage in the process to avoid completing further tiers unnecessarily.

You should gather data or information about the physical and chemical composition of your material and its hazard profile, as well as the physicochemical and biological (if applicable) properties of the material under consideration, with secondary reference to the likely use. This should include consideration of the following:

- Broad literature review;
- Previous risk assessments;
- Manufacturers / producers; and
- Use of your composition analysis to identify potential risks, since not all components may be found in literature.

The outputs from the hazard screening exercise can be presented as a table identifying the chemicals and the potential hazards they present in reference to a specific use, along with full references. This should also include an audit trail, for example providing search criteria and dates on which you accessed documents.

6.2.1.2 Step 2: Identify your application scenarios (intended end uses of the material)

Your end use scenarios will be relatively specific (for example, application to agricultural land as a fertiliser). You should take care to **define the characteristics of each end use** in a way that adheres to the principles of the tiered assessment, specifically that they are generic and represent a realistic or 'reasonable worst-case' conditions.

You should first detail how the material is used in the application scenario, for example:

- Indoors or outdoors;
- Bound or unbound (e.g. secondary aggregates);
- Exposed to the elements or covered (if so, with what? Is the cover material permeable or impermeable to liquids and/or gas?);
- Is the material used at 100% concentration or blended with other materials (if so, what are they? Each blend may represent a separate use scenario);
- If applied to land is it above or below the water table (in the saturated zone or not)?; and
- The standard(s)/ specifications that apply to the application.

Are there any other possible uses other than those that you propose for the material? These could pose a risk and so should also be considered. **Identify every separate scenario**. Each intended use scenario needs to be assessed in order to be included in your end-of-waste application. You should also clearly state if your product is not suitable for certain use scenarios and specify the reasons for this.

Once an end use scenario is identified, it should then be possible to assess the likelihood of potential risks for the hazards identified. For example, a chemical might have been identified as presenting a potential hazard in the material, but if the chemical is readily degradable under the conditions of the end use scenario, then the source to receptor pathway may not be present (if there is no source, pathway or receptor, there is no risk).

6.2.1.3 Step 3: Develop a conceptual model

You need to **develop a conceptual model for each use scenario**. This means, placing the use of your material in the context of its environment to identify pollutant linkages between the sources (the hazards identified in step 1), pathways and receptors. Because the conceptual model will be generic for each end use scenario, rather than being a site-specific assessment, it should be represented by realistic or 'reasonable worst-case' conditions.

This is an essential step to help you (and the Agency, as the assessor) to understand the risks associated with your proposals by helping you to **identify pollutant linkages** between the sources, pathways and receptors. It can help identify risks which may not have been considered, and crucially, it can also help you to rule things out.

You are seeking to identify routes (pathways) via which any component of the material, within its use scenario, can reach any receptor. If there is no pathway there is no risk and hence no need for further assessment.

Your conceptual model should apply lifecycle thinking to identify all potential direct and indirect human health and environmental impacts on all receptors (environmental media), namely:

- Air (including indoor, workplace and outdoor air);
- Water (ground water and surface water, including runoff, drainage and sewer effluent);
- Soil (including sediments, fill material and other geologic material); and
- Living organisms (people, animals and plants).

Impact on human health should include consideration of potential food chain pathways as well as other direct and indirect exposure by consumers or workers from use or handling (e.g. via an ingestion, inhalation or dermal contact pathway) of the product. This could include exposure to a toy or to buildings constructed from recovered materials, or occupational exposure using the material in the factory to manufacture a final product.

Assessors may not be familiar with your processes and end use, so a visual aid is helpful in the form of:

- diagrams;
- tables;
- matrices; and/or
- written descriptions.

It should be noted that the conceptual model should be refined as you progress through the further tiers and stages. It will form the basis of your assessment and will help you evaluate the risks correctly.

6.2.1.4 Step 4: Summarise risk to environment and human health to determine any likely adverse impacts

The overall purpose of a tier 1 assessment is to screen out hazards where the possibility of an overall adverse effect on the environment or human health is so low that it can be ruled out as a possibility. Further assessment is therefore not required. A hazard may be ruled out at the tier 1 stage because it has been determined (step 3) that there is no pollutant linkage. For example, the receptor is not vulnerable to the hazard or there is no pathway.

Step 4 should include a summary of the findings of your tier 1 risk assessment, qualitatively assessing the risks to **decide whether there is a likelihood of harm or pollution**. This should include conclusions on whether pollutant linkages exist, the likelihood of harm or pollution associated with those pollutant linkages and whether further risk assessment is required in order to quantify potential adverse impacts to human health and the environment.

6.2.2 Tier 2: Generic Quantitative Risk Assessment

Generic quantitative risk assessment is typically undertaken by comparing the hazard component (concentrations) against published generic assessment criteria (GAC) (or generic screening levels).

GAC criteria are derived using generic assumptions about the characteristics and behaviour of contaminants (sources), pathways and receptors. These assumptions will be protective in a range of defined conditions and represent concentrations below which impact on receptors (human health, water-dependent ecosystems, etc.) is very unlikely. GAC criteria are useful for

screening and quantification purposes. For example, leachate concentrations that are found to exceed groundwater GAC are an indication of potential risk to receptors and therefore this requires a detailed quantitative risk assessment (tier 3) to be undertaken.

When applying a generic quantitative risk assessment, the risk should be assessed for each pollutant linkage. The assessment should include simple assessments of the predicted impact of the hazard on all the receptors. The GAC must be:

- Authoritative and scientifically based;
- Relevant and appropriate for the site;
- Conservative and protective (assuming a worse-case scenario); and
- Not site specific.

For each hazard, the starting point for estimating its impact on the environment or human health is a sound understanding of the chemical levels in the material and the end use scenario. Where **there is published evidence** of the outcome of the application of these materials in a relevant end use scenario, this evidence can be used to make a comparison with the screening assessment criteria recognised for each identified receptor. If **there is no such published evidence**, the emission of chemicals into the environment and the resulting chemical concentrations in different environmental media will need to be estimated or modelled and compared against relevant assessment criteria for each identified receptor to determine whether there will be adverse impact under a tier 3 assessment.

Under European and national environmental legislation, the Republic of Ireland is required to implement the measures necessary to prevent hazardous substances from entering soil, water (including groundwater and surface water) and air. Relevant assessment criteria for impacts on the environment can be identified with reference to such environmental legislation. Values for screening of the impact may come from several sources, including the European Communities Groundwater Threshold Values (GTVs)[3], the EPA's GTVs[4], the EPA's Interim Guideline Values (IGVs)[5] when considering a groundwater receptor, or relevant Environmental Quality Standards (EQS)[6] when considering a surface water receptor, or Drinking Water Standards (DWS)[7] when considering drinking water as a pathway for receptors. The EPA Guidance on the Authorisation of Discharges to Groundwater[8] should also be considered when assessing impact or potential impacts on groundwater resources.

GAC allow the magnitude of reported contamination to be put in context and help screen out concentrations that are not elevated from those that are presented in the GAC. This provides a short list of contaminants/chemicals of potential concern, that will be required to be taken forward for detailed quantitative risk assessment (tier 3). Useful links to detailed technical

3 European Communities Environmental Objectives (Groundwater) Regulations 2010 (S.I. no. 9 of 2010), as amended.

4 Methodology for Establishing Groundwater Threshold Values, the Assessment of Chemical and Quantitative Status for Groundwater and Groundwater Trends (EPA, 2010) (https://www.epa.ie/pubs/reports/water/ground/groundwaterthresholdvaluesandassessmentofchemicalandquantitativestatus.html)

5 Towards Setting Guideline Values For The Protection Of Groundwater In Ireland – Interim Report (EPA, 2003) (https://www.epa.ie/pubs/advice/water/ground/towardssettingguidelinevaluesfortheprotectionofgroundwaterinireland.html)

6 European Communities Environmental Objectives (Surface Waters) Regulations, 2009 (S.I. No. 272 of 2009), as amended.

7 European Communities (Drinking Water) Regulations 2014 (S.I. 122 of 2014) , as amended.

8 Guidance on the Authorisation of Discharges to Groundwater (EPA, 2011) (https://www.epa.ie/pubs/reports/water/ground/dischgw/)

guidance on assessing risks to specific receptors (e.g. human health, water environment, ecosystems, buildings and structures, risks from gases and vapours, etc.) are available on the CL:AIRE Water and Land Library[9].

If **a screening assessment criterion is not available** for a combination of a chemical and a receptor, it is potentially possible to derive an informal value for the specific assessment, however this often requires expert knowledge and may be costly. You should also consider whether the absence of an assessment criterion may indicate that a pathway is unlikely or that the hazard to a specific receptor is low e.g. aquatic guidelines may not have been established for chemicals that are insoluble in water as they are unnecessary.

To assess whether there will be an adverse impact on human health, concentrations in the materials should be compared against Health Criteria Values (HCVs)[10]. Risk can be characterised by comparing exposure defined by estimated chemical intakes by adults and children with HCVs that define acceptable or tolerable intakes derived from toxicological studies.

If the representative hazard concentrations are all below the GAC/ HCVs then the risk is deemed to be acceptable and no further action is required, so long as the appropriate assessment criteria were correctly applied in the first instance. If the representative hazard concentrations are greater than the GAC then the risk may be unacceptable, and it may be necessary to carry out detailed quantitative risk assessment (tier 3).

An exceedance of a screening criterion identifies the need for further assessment (tier 3) but it does not necessarily imply that there is an unacceptable level of risk. For example, a tier 2 assessment is considering the potential for an overall adverse effect to arise from leachable chemicals that are present in a material reaching a surface water receptor. This could involve comparing the results from a standard leach test (for example, the 90th percentile at a liquid to solid ratio of 0.1 or 0.2) with the respective assessment criterion. If any chemicals show an exceedance in tier 2, it is necessary to assess them further in a tier 3 assessment. In tier 3, the same leach test results could be used, adjusted for 'realistic worst-case' dilution of the leachable chemicals in the receiving watercourse. This applies a lower level of conservatism but requires the dilution to be modelled.

The conclusion of your generic quantitative risk assessment should include a summary of the findings of your tier 2 risk assessment including whether pollutant linkages exist, the likelihood of harm or pollution associated with those pollutant linkages and whether further risk assessment is required in order to quantify potential adverse impacts to human health and the environment. In addition, the conceptual site model developed under tier 1 should be refined.

6.2.3 Tier 3: Detailed Quantitative Risk Assessment

If the tier 2 generic quantitative risk assessment has indicated that there is a potential risk to a receptor from an identified hazard, you should progress to a tier 3 risk assessment for that particular hazard and receptor where it has been identified that there could be an adverse effect. Tier 3, if required, generally requires more complex risk modelling tools and the generation of more detailed (less conservative still) data to characterise the scenario, material and receptors under consideration. Specialist advice is likely to be required when moving to tier 3.

9 https://www.claire.co.uk/information-centre/water-and-land-library-wall

10 HCVs are 'guidance levels' that allow the risk to human health to be determined for defined scenarios. They include levels that are relevant to different types of exposure, including inhalation values (e.g. OELs 'Occupational Exposure Levels') and oral values (ingested dose, e.g. TDI 'Tolerable Daily Intake').

A detailed quantitative risk assessment requires that specific assessment criteria be developed. These specific assessment criteria may relate to end use-specific or site-specific criteria. The representative hazard concentrations are compared to the specific assessment criteria. Specific assessment criteria are derived using detailed data on the contaminant (e.g. chemical form), pathway (e.g. attenuation rates), and receptor (e.g. time on site). The specific assessment criteria are usually more onerous than GAC and only apply to the end use they were developed for. Each individual receptor is modelled e.g. human health, groundwater, surface waters, ecology etc. Different risk assessment modelling tools are available as well as numerical groundwater flow models, numerical contaminant fate and transport models and other receptor specific models.

The EPA recommends that where risk assessment modelling is required, models which have been benchmarked by the UK Environment Agency as part of CLR 11[11] are used. It should be noted that accredited risk assessment tools and models should only be used by suitably qualified/experienced practitioners and should be selected and deployed with careful consideration to Ireland's specific geology and hydrogeology. Justification should be provided for any model being used.

Due to the varied nature of potential end-of-waste materials, uses and potential impacts, it is not possible to provide comprehensive guidance in this document on specific methods for tier 3 detailed quantitative risk assessments and reiterate that specialist advice should be sought if necessary.

The conclusion of your detailed quantitative risk assessment should include a summary of the findings of your tier 3 assessment including whether pollutant linkages exist, and the likelihood of harm or pollution associated with those pollutant linkages. In addition, the conceptual site model developed under tier 1 and tier 2 should be refined and finalised.

11 In June 2019 the Environment Agency (EA) published an update to the model procedures for the management of land contamination (CLR11), titled Land Contamination: Risk Management (LCRM). This was guidance was open for feedback in 2019. The EA state that they are currently looking at the feedback and will republish the guidance in early 2020. The EA will withdraw CLR11 when this updated guidance is published.

7. PROPOSING END-OF-WASTE CRITERIA

An essential final stage is to draw together your specific end-of-waste criteria from the full analysis that you have undertaken and to set these out in your application. The conclusion of your application should therefore be a clear set of criteria, addressing each pillar of the end-of-waste test, that you have compiled as a result of your assessment. The rationale for the criteria should be fully set out in the detailed sections of your application. Criteria can include, for example:

- controls over the sources and/or types of waste to be accepted into the process;
- concentration limits for constituents (e.g. contaminants) and/or requirements for physical properties of the input material (waste accepted);
- definition of the treatment (recovery) process;
- concentration limits for constituents (e.g. contaminants) and/or requirements for physical properties of the fully recovered material; and
- defined applications that the material can be used in and any 'controls' or limitations required in each application.

The Agency is fully committed to working with applicants to support appropriate end-of-waste decisions and consequently Ireland's circular economy objectives. However, it is important to recall that an application is the basis of an important regulatory decision that requires detailed scrutiny in the light of all relevant circumstances in that particular case. Therefore, applicants must recognise that, even if its application is good quality, it may not be possible to reach a positive end-of-waste decision or that it may only be possible to achieve end-of-waste for certain defined applications.

Considering this further, it is possible that an application will determine that the use of the material in defined applications presents unacceptable risks to human health or the environment. It is also possible that the assessment will determine that specific uses require certain controls or limitations to be in place to reduce the risks but that these controls are over and above those required for non-waste derived materials used in the same way. The Agency must consider if the proposed controls indicate that the material in fact retains its waste characteristics and whether its use should therefore take place under waste regulatory controls, so it does not undermine the effectiveness of the Waste Framework Directive.

Therefore, when setting out the required controls, applicants should define these for each specific application scenario and should also refer to the relevant technical requirements to determine if the required controls are broadly equivalent to those required for applications of the alternative non-waste material.

8. DEMONSTRATING ONGOING COMPLIANCE

8.1 Monitoring Compliance

If your end-of-waste application is successful, your obligations do not end there. You are now at the beginning of the ongoing compliance process. You need to ensure that:

- The circumstances of your end-of-waste application do not change. Any material change to your quality control procedures (waste inputs, waste treatment approach, technical requirements, markets etc.) may mean that your original end-of-waste application is no longer relevant or may need to be extended (e.g. if you have identified a new material use for which you seek end-of-waste status).
- That you continue to analyse the fully recovered material (compliance monitoring) so that you can confirm:
  - it continues to comply with end-of-waste criteria;
  - it remains within the requirements of the product specification(s); and
  - its properties have not changed therefore the risk assessment remains valid.

Your end-of-waste application needs to set out how you will monitor and demonstrate ongoing compliance. This includes for example setting out your approach to ongoing sampling and analysis and periodic review of your quality procedures, including how you will undertake monitoring against relevant technical requirements.

You may be subject to periodic inspections by the Agency and/or any other appropriate regulatory body to review your compliance regime.

8.2 Product Regulations

Your 'product' may also be subject to product regulations and controls. The following are common examples, but you must review whether any other controls apply to your circumstances. Your application should specify which product regulations apply to your product and detail how these shall be complied with.

CE Marking (Construction Products)

https://europa.eu/youreurope/business/product-requirements/labels-markings/ce-marking/index_en.htm

https://ec.europa.eu/growth/content/ce-marking-construction-products-step-step-guide-now-available-all-eu-languages-0_en

Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH Regulation) (Chemical Products)

https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1436265231260&uri=CELEX:32006R1907

Classification, Labelling and Packaging of Substances and Mixtures (CLP Regulation) (Chemical Products)

https://eur-lex.europa.eu/legal-content/en/ALL/?uri=CELEX:02008R1272-20190726

Persistent Organic Pollutants Regulation (POPs Regulation)

https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R1021&from=EN

European Communities Chemicals Act (Control of Major Accident Hazards Involving Dangerous Substances) Regulations 2015 (S.I. No. 209 of 2015) (the "COMAH Regulations")

http://www.irishstatutebook.ie/eli/2015/si/209/made/en/print

8.2.1 REACH Regulation

Wastes are exempt from REACH. REACH however does apply to substances that are recovered from waste once they cease to be waste and are placed on the market. REACH obligations are a common query in relation to end-of-waste, therefore this section explains the implications further, taking account of existing guidance on how REACH relates to waste derived materials[12].

- Recovery businesses are considered to be manufacturers under REACH, so may have registration obligations, unless certain exemptions apply;
- The main obligation under REACH is to register substances;
- There are some exemptions from registration obligations that could apply to recovered substances. These can be invoked for most recovered metals, some recovered solvents and some recovered plastics. Compost, biogas and anaerobic digestate are also exempt from REACH registration;
- Exemptions exist, for example, when the category of substance is already known to pose little or no risk to human health or the environment or the recovered substance is the same as its virgin equivalent that has been previously registered; and
- REACH requires manufacturers and importers of substances in quantities of 10 tonnes or more per annum to prepare a Chemical Safety Report. This must include exposure scenarios based on declared uses of the substances and recommend appropriate risk management measures.

The European Chemicals Agency (ECHA) has published further guidance on REACH and recovered waste substances. This contains specific guidance on paper, glass, metals, aggregates, polymers, rubber base oils and solvents[13].

If you are unsure about your obligations under REACH, you should seek independent advice or contact the Health and Safety Authority (HSA)[14], the lead Competent and Enforcement Authority for REACH in Ireland.

12 "*REACH and Substances Recovered from Waste*", UK REACH Competent Authority Information Leaflet 14 – Substances Recovered from Waste, July 2016, HSE https://www.hse.gov.uk/reach/resources/waste.pdf

13 https://echa.europa.eu/documents/10162/23036412/waste_recovered_en.pdf/657a2803-710c-472b-8922-f5c94642f836

14 https://www.hsa.ie/eng/Your_Industry/Chemicals/Legislation_Enforcement/REACH/

9. OTHER USEFUL INFORMATION

The following provides guidance on how to manage any confidential information in your application and sets out some common mistakes and points to remember when developing your application.

9.1 Identifying and Protecting Confidential Information

Making an end-of-waste application requires the preparation and submission of information, some of which applicants may consider to be commercially sensitive or confidential.

The Freedom of Information Act 1997 (FOI Act) as amended by the Freedom of Information (Amendment) Act 2003 obliged a range of public bodies to publish information on their activities and to make the information that they held, including personal information, available to citizens. Citizens Information has published guidance on Freedom of Information[15].

The Access to Information on the Environment Regulations 2007 (AIE Regulations)[16,17] give citizens the right to access Environmental Information held by, or for, the Agency and other public authorities.

The information in your application may potentially come within the scope of the definition of Environmental Information. If it does not, the information may anyway be requested under the FOI Act.

As such, any data that you submit to the Agency as part of an end-of-waste application may be requested and subsequently have to be made available to the party that has requested it.

Therefore, if you consider that it is necessary to include any information that is sensitive and/or confidential in your application to allow the Agency to make an end-of-waste decision, you should clearly identify and separate it within your application. The Agency suggests that you provide such information as a separate appendix or enclosure bearing the legend "*In the event this information is deemed not to be held as confidential, it must be returned to…*". The Agency can then redact the information, if the application is subject to an FOI request, or return it after making its assessment.

You should also state the reasons why you consider the information to be confidential, with reference to the provisions in the AIE Regulations. In the event that the Agency decides to withhold information from the public, the nature of that information and the reason why it is considered confidential will be available for public inspection.

Note the Agency does not at this stage intend to adopt any single case decisions as national decisions. This means that individual applications and the decisions arising are for the benefit of the applicant companies only.

15 https://www.citizensinformation.ie/en/government_in_ireland/national_government/standards_and_accountability/freedom_of_information.html

16 https://www.epa.ie/about/info/aie/

17 https://www.dccae.gov.ie/en-ie/about-us/compliance/access-to-information-on-the-environment-(aie)/aie-legislation/Pages/AIE-Legislation.aspx

9.2 Common Mistakes

- Not enough information/ detail.
  - Not telling the full story in terms of waste inputs, processes, outputs ('product') and uses.
- Too much detail outside the scope of the legal test – keep it relevant.
- Overreliance on work from other jurisdictions without clearly explaining why the adopted position is considered directly relevant (e.g. not acknowledging that scenarios can be quite different).
- Not clearly addressing all the elements of Article 28(1):
  - Failing to propose end-of-waste criteria;
  - Unclear how the quality of waste inputs are maintained;
    - Not describing how waste input will be assured to be free of contamination to maintain the quality of recovered product(s);
  - Unclear what product(s) is to be replaced;
    - Not identifying the standard(s) applicable to the product(s);
    - Not clearly explaining why available standards are considered irrelevant;
    - No product specification or insufficient specification;
  - Not justifying that it is used in the same way as the equivalent non-waste derived product;
  - Not including details of quality assurance procedures to give confidence that controls will be correctly and consistently applied;
  - Confusing the point at which to consider 'no overall adverse impact'. Depending on the end-of-waste point. This can be either:
    - When the material is placed on the market (most commonly, i.e. bringing the point of recovery forward from the point of use); or
    - When it is used;
  - Missing or inadequate risk assessments;
    - Use scenarios are not explained;
    - Risk assessments are not presented for all uses;
    - Lack of clarity on whether the material is used as a partial or full replacement of a product;
    - Inadequate data for emissions, leachate testing etc.; and
  - Where there is apparent dilution of waste.

9.3 Things to Remember

- Keep in mind the process for protecting any confidential information (reference section 9.1.1) when developing and making your application.
- Diagrams, photographs and copies of documents (e.g. process flow, quality procedures) can support your application by bringing your process to life.
- The key underlying principle to achieving end-of-waste status is demonstrating that there is no overall adverse human health or environmental effect.
- Understand your waste, source, process and market and set these out clearly.
- Good data is critical.
- Sampling: be specific, know what to sample for and use a consistent sampling regime that takes account of the relevant technical requirements.
- Consider whether identifying a comparator is helpful.
- Designing, undertaking and interpreting the outcomes of a risk assessment can be complicated. Specialist advice is recommended to ensure your risk assessment is appropriate and meaningful and to ensure that you do not undertake expensive abortive work.
- Ask the Agency if you have any further questions.

AN GHNÍOMHAIREACHT UM CHAOMHNÚ COMHSHAOIL

Tá an Ghníomhaireacht um Chaomhnú Comhshaoil (GCC) freagrach as an gcomhshaol a chaomhnú agus a fheabhsú mar shócmhainn luachmhar do mhuintir na hÉireann. Táimid tiomanta do dhaoine agus don chomhshaol a chosaint ar thionchar díobhálach na radaíochta agus an truaillithe.

Is féidir obair na Gníomhaireachta a roinnt ina trí phríomhréimse:

Rialáil: *Déanaimid córais éifeachtacha rialaithe agus comhlíonta comhshaoil a chur i bhfeidhm chun torthaí maithe comhshaoil a sholáthar agus chun déileáil leo siúd nach gcloíonn leis na córais sin.*

Eolas: *Soláthraímid sonraí, faisnéis agus measúnú comhshaoil atá ar ardchaighdeán, spriocdhírithe agus tráthúil chun bonn eolais a chur faoin gcinnteoireacht ar gach leibhéal.*

Abhcóideacht: *Bímid ag saothrú i gcomhar le grúpaí eile chun tacú le comhshaol atá glan, táirgiúil agus cosanta go maith, agus le hiompar a chuirfidh le comhshaol inbhuanaithe.*

Ár bhFreagrachtaí

Ceadúnú

Déanaimid na gníomhaíochtaí seo a leanas a rialú ionas nach ndéanann siad dochar do shláinte an phobail ná don chomhshaol:

- saoráidí dramhaíola (*m.sh. láithreáin líonta talún, loisceoirí, stáisiúin aistrithe dramhaíola*);
- gníomhaíochtaí tionsclaíocha ar scála mór (*m.sh. déantúsaíocht cógaisíochta, déantúsaíocht stroighne, stáisiúin chumhachta*);
- an diantalmhaíocht (*m.sh. muca, éanlaith*);
- úsáid ghlanscartha agus scaoileadh rialaithe Orgánach Géinmhodhnaithe (*OGManna*);
- foinsí radaíochta ianúcháin (*m.sh. trealamh x-gha agus radaiteiripe, foinsí tionsclaíocha*);
- áiseanna móra stórála peitril;
- doirtí fuíolluisce;
- gníomhaíochtaí dumpála ar farraige.

Forfheidhmiú Náisiúnta i leith Cúrsaí Comhshaoil

- Clár náisiúnta iniúchtaí agus cigireachtaí a dhéanamh gach bliain ar shaoráidí a bhfuil ceadúnas ón nGníomhaireacht acu.
- Maoirseacht a dhéanamh ar fhreagrachtaí cosanta comhshaoil na n-údarás áitiúil.
- Caighdeán an uisce óil, arna sholáthar ag soláthraithe uisce phoiblí, a mhaoirsiú.
- Obair le húdaráis áitiúla agus gníomhaireachtaí eile chun dul i ngleic le coireacht chomhshaoil trí chomhordú a dhéanamh ar líonra forfheidhmiúcháin náisiúnta, díriú ar chiontóirí, agus maoirsiú a dhéanamh ar fheabhsúchán.
- Rialacháin maidir le Dramhthrealamh Leictreach agus Leictreonach (WEEE), le Srian ar Shubstaintí Guaiseacha (RoHS) agus ar shubstaintí ídíonn an ciseal ózóin.
- An dlí a chur orthu siúd a bhriseann dlí an chomhshaoil agus a dhéanann dochar don chomhshaol.

Bainistíocht Uisce

- Monatóireacht agus tuairisciú a dhéanamh ar cháilíocht aibhneacha, lochanna, uiscí idirchreasa agus cósta na hÉireann, agus screamhuiscí; leibhéil uisce agus sruthanna aibhneacha a thomhas.
- Comhordú náisiúnta agus maoirsiú a dhéanamh ar an gCreat-Treoir Uisce.
- Monatóireacht agus tuairisciú a dhéanamh ar Cháilíocht an Uisce Snámha.

Monatóireacht, Anailís agus Tuairisciú ar an gComhshaol

- Monatóireacht a dhéanamh ar cháilíocht an aeir agus Treoir an AE maidir le hAer Glan don Eoraip (CAFÉ) a chur chun feidhme.
- Tuairisciú neamhspleách le cabhrú le cinnteoireacht an rialtais náisiúnta agus áitiúil (*m.sh. tuairisciú tréimhsiúil ar Staid Chomhshaol na hÉireann agus Tuarascálacha ar Thascairí*).

Rialú Astaíochtaí na nGás Ceaptha Teasa in Éirinn

- Fardail agus réamh-mheastacháin na hÉireann maidir le gás ceaptha teasa a ullmhú.
- An Treoir maidir le Trádáil Astaíochtaí a chur chun feidhme i gcomhair breis agus 100 de na táirgeoirí dé-ocsaíde carbóin is mó in Éirinn.

Taighde agus Forbairt Comhshaoil

- Taighde comhshaoil a chistiú chun brúnna a shainaithint, bonn eolais a chur faoi bheartais, agus réitigh a sholáthar i réimsí na haeráide, an uisce agus na hinbhuanaitheachta.

Measúntachtaí Straitéisí Comhshaoil

- Measúnacht a dhéanamh ar thionchar pleananna agus clár beartaithe ar an gcomhshaol in Éirinn (*m.sh. mórphleananna forbartha*).

Cosaint Raideolaíoch

- Monatóireacht a dhéanamh ar leibhéil radaíochta, agus measúnacht a dhéanamh ar a oiread is atá muintir na hÉireann gan chosaint ar an radaíocht ianúcháin.
- Cabhrú le pleananna náisiúnta a fhorbairt le haghaidh éigeandálaí ag eascairt as taismí núicléacha.
- Monatóireacht a dhéanamh ar fhorbairtí thar lear a bhaineann le saoráidí núicléacha agus leis an tsábháilteacht raideolaíochta.
- Sainseirbhísí cosanta ar an radaíocht a sholáthar, nó maoirsiú a dhéanamh ar sholáthar na seirbhísí sin.

Treoir, Faisnéis Inrochtana agus Oideachas

- Comhairle agus treoir a chur ar fáil d'earnáil na tionsclaíochta agus don phobal maidir le hábhair a bhaineann le caomhnú an chomhshaoil agus leis an gcosaint raideolaíoch.
- Eolas tráthúil agus inrochtana faoin gcomhshaol a chur ar fáil chun an pobal a spreagadh páirt a ghlacadh i gcinnteoireacht chomhshaoil (*m.sh. Mo Thimpeallacht Áitiúil, Léarscáileanna Radóin*).
- Comhairle a chur ar fáil don Rialtas maidir le hábhair a bhaineann leis an tsábháilteacht raideolaíoch agus le cúrsaí práinnfhreagartha.
- Plean Náisiúnta Bainistíochta Dramhaíola Guaisí a fhorbairt chun dramhaíl ghuaiseach a chosc agus a bhainistiú.

Múscailt Feasachta agus Athrú Iompraíochta

- Feasacht chomhshaoil níos fearr a ghiniúint agus dul i bhfeidhm ar athrú iompraíochta dearfach trí thacú le gnóthais, le pobail agus le teaghlaigh a bheith níos éifeachtúla ar acmhainní.
- Tástáil le haghaidh radóin a chur chun cinn i dtithe agus in ionaid oibre, agus gníomhartha leasúcháin a spreagadh nuair is gá.

Bainistíocht agus Struchtúr GCC

Tá an gníomhaireacht á bainistiú ag Bord lánaimseartha, ar a bhfuil Ard-Stiúrthóir agus cúigear Stiúrthóirí. Déantar an obair ar fud cúig cinn d'Oifigí:

- An Oifig um Inbhuanaitheacht Comhshaoil
- An Oifig Forfheidhmithe i leith Cúrsaí Comhshaoil
- An Oifig um Fhianaise agus Measúnú
- An Oifig um Chosaint Radaíochta agus Monatóireacht Chomhshaoil
- An Oifig Cumarsáide agus Seirbhísí Corparáideacha

Tá Coiste Comhairleach ag an nGníomhaireacht le cabhrú léi. Tá dáréag comhaltaí air agus tagann siad le chéile go rialta le plé a dhéanamh ar ábhair imní agus le comhairle a chur ar an mBord.

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Headquarters

PO Box 3000,
Johnstown Castle Estate
County Wexford, Ireland

T: +353 53 916 0600
F: +353 53 916 0699
E: info@epa.ie
W: www.epa.ie
LoCall: 1890 33 55 99

Regional Inspectorate
McCumiskey House,
Richview, Clonskeagh Road,
Dublin 14, Ireland

T: +353 1 268 0100
F: +353 1 268 0199

Regional Inspectorate
Inniscarra, County Cork,
Ireland

T: +353 21 487 5540
F: +353 21 487 5545

Regional Inspectorate
Seville Lodge, Callan Road,
Kilkenny, Ireland

T +353 56 779 6700
F +353 56 779 6798

Regional Inspectorate
John Moore Road, Castlebar
County Mayo, Ireland

T +353 94 904 8400
F +353 94 902 1934

Regional Inspectorate
The Glen, Monaghan, Ireland

T +353 47 77600
F +353 47 84987

Regional Offices

The Civic Centre
Church St., Athlone
Co. Westmeath, Ireland
T +353 906 475722

Room 3, Raheen Conference Centre,
Pearse House, Pearse Road
Raheen Business Park, Limerick,
Ireland
T +353 61 224764

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