SB&WRC Project

Legal analysis on waste recovery activities

November 2017
Abstract of the project

The SB&WRC (Sustainable Bio&Waste Resources for Construction) project, an undertaking of more than two years, aims to conceive, produce and test three innovative, low-carbon, thermal insulation materials from agricultural co-products and recycled waste. The project is supported by the development program Interreg VA France (Channel) England and its budget, estimated to be 1.8M€, is co-financed by the ERDF (European Regional Development Fund) for 69% (1.26M€ contribution).

This project, led by Nomadéis, is carried out by a cross-channel partnership which gathers academic research laboratories, private research and consulting companies, manufacturers and professional non-profit organisation of the building sector:

- Nomadéis;
- Veolia Propreté Nord Normandie;
- University of Bath;
- Ecole Supérieure d’Ingénieurs des Travaux de la Construction de Caen (ESITC Caen);
- Construction 21;
- UniLaSalle;
- University of Brighton;
- Alliance for Sustainable Building Products.
Abstract

The subject of this note is to analyse the legal context of the activities of treatment and valorisation of waste, in order to indicate the procedures to follow to lead these activities in accordance with the applicable regulation, to any third-party actor interested by the development on a big scale of SB&WRC prototypes.

After recalling the principles at the heart of the concept of waste, while paying a particular attention to the questions of responsibility imputed to the different actors manipulating waste, as well as the regulatory differences between France and the United Kingdom, this legal analyze offers a summary of the regulatory issues to take into account for the valuation of waste. The note details in particular the hierarchy of the treatment modes and the different procedures allowing access to an exit of the status of waste in France and in the United Kingdom.

Following these analysis, the note suggests a concrete approach of the impact of this regulation on the actions of the actors of the sector throughout the transport, the stocking, the transformation of waste and the commercialisation of materials originated by this process.
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0. Synthetic scheme

Legal framework of the manufacturing of materials from waste

Production of waste
- Classification of waste
- Respect of the waste producer’s obligations
  - Prevention
  - Transparency
  - Sorting and recovery

Waste storage
- France: Declaration to the prefecture
- England: Declaration to the Environment Agency

Waste transformation
- France: Inscription in the ICPE register according to the treated volume
- England: Requirement of an environmental permit except if there is exemption

Manufacturer’s activities

Certification for commercialisation
- Obligatory European evaluations:
  - CE marking
  - European Technical Evaluation (ETE)
- Voluntary Evaluations (France)

Distribution of materials

Waste traceability
- France: Keep a register for each step of the cycle (Waste Monitoring Forms)
- England: Keep a register only for the transfer activities (waste transfer notes)

Legend:
- : Obligatory procedure
- X: Advised procedure
1. Legal concepts definitions

1.1 Legal definition of the concept of waste

1.1.1 At the center of the notion of waste: the intention to dispose of a product

The European directive 2008/98/CE sets a referential definition of the notion of waste in Europe. Article 3 defines waste as « any substance or object that the owner disposes or intends to or is required to dispose ». The European directive has been transposed in the national rights of its Member States: There is the definition of waste, in identical terms to those introduced by the directive in the French environment code, (article L.541-1-1) and in the British law The Waste (England and Wales) Regulations-2011.

The status of waste lies in the intention of an actor to dispose of a product he owns. The importance of the owner’s initial intention of getting rid of goods is capital for the obtention of the status of waste and modifies the legal framework of all subsequent activities. Indeed, if a company A transfers to a company B a product, the fact whether or not it is waste has significant consequences on the way it should be treated, for its transformation into a whole or part of a new product. When the company wishes to sell or give out a product, the operation is legally qualified as reuse: The ceding company is discharged of any responsibility from the transfer of ownership of the property to the transferee. However, the qualification of a good as waste imposes a strict compliance with the applicable regulations: as a waste owner, the company is required to characterize such waste, but also guarantee its traceability and choose the treatment chain for it.

1.1.2 The different types of waste

The European directive 2008/98/CE also introduces a waste classification. This classification can be done according to different criteria: the type of producer (household waste or waste generated by economic activities) the sector in which the waste is produced (agricultural or industrial waste, etc.) or the attributes of the waste (dangerous or not, inert or not). Thanks to the classification according to the sector of production, a nomenclature for waste has been introduced: it is a regulatory codification, enabling to identify every kind of waste with a six-digit code. This waste code features in all official documents for the management of such waste.

1.1.3 The implications of the status of waste: administrative and fiscal obligations

The legal definition of waste is particularly important so far as the classification of an element as waste is the basis of the formulation of a waste management policy (driven in particular from statistical monitoring of waste flows), and the implementation of controls on them. The legal qualification of the waste leads indeed to particular administrative and fiscal obligations for the waste owners in terms of collection, sorting, handling, transport and treatment. These constraints aim to prevent eventual damages on human health and on the environment.
Sidebar 1: What are the differences between waste, co-product and by-product?

The particular case of straw

The non-hazardous natural substances coming from agriculture or forestry are excluded from the scope of the European directive 2008/98/CE regarding waste (and thus in its transcription in the French or British law). It is namely the case for straw. Hence, the regulation that is applied for the treatment of this product is different from the one applied to waste as defined above.

Straw can be legally considered as a co-product, meaning that it is a material, non-intentional and unavoidable, created during the fabrication process and at the same time as the principal product. In order to acquire this status, both the final principal product and the co-product must meet specific characteristics and be able to be used directly for a particular purpose. A co-product is also characterized by its economic valuation (a specific market provides its commercialisation).

As a co-product, straw (as well as all other materials qualified as co-products) is subject to the classic legal regulations relative to agriculture products, far simpler and less restrictive than the regulation induced by the qualification of waste (transport, traceability, etc.).

It is important to distinguish the notion of co-product and that of byproduct. A byproduct is defined by ADEME as « a residual product that appears during the manufacturing or the distribution of a finished product. It is unintentional, unpredictable and accidental. It can be used directly or constitute an ingredient of another production process for the manufacturing of another finished product. » The definition of a byproduct thus covers various situations: non-compliant finished products, surplus, etc.

Note that the qualification of a material as co-product, byproduct or waste status is never definitive. Indeed, this status does not depend on the quality of the product but on the economic and legal context that surrounds it. A fruit can thus go from the status of main product to that of by-product if it does not fit into the defined calibres, then to the status of waste when the standards of hygiene make it unfit for sale (expiry date).

1.2 Definition of the status of actors in the waste sector

The European directive 2008/98/CE also introduces a structuring legal framework for the various situations in which the actors involved in waste management find themselves. The text introduces four central notions:

- « Waste producer » refers to any person whose activity produces waste or who performs pre-treatment, mixing or other operations leading to a change in the nature or composition of such waste. This category of actor gathers both industrial companies, for whom waste production is inherent to the production of goods. (ex: the production of inert waste - concrete, bricks, ceramic, tiles - by the demolition companies of the construction industry), but also companies involved in waste treatment (ex: waste sorting centers);
- « Waste holder » Qualifies the producer of waste or the physical or moral person who owns the waste. (ex: the owner of the landfill, the waste transport company, etc.). All actors of the waste chain are therefore, at some point, designated by the status of waste holder;
- « Negotiator » Defines any company that undertakes for its own account the acquisition and subsequent sale of waste, including traders who do not physically take possession of waste;
• « Broker » Designates any company that organizes the recovery or elimination of waste on the behalf of third parties, including brokers who do not physically take possession of waste;

Every actor of the branch has a certain number of obligations, determined by the European directive and its transcription on national rights. In France, waste holders located on treatment facilities must for example comply with the regulation of classified installations for environmental protection (ICPE) (cf. intra, section 3.2). The classification of waste storage and treatment sites is subject to a prefectural authorization and enables to control activities related to waste management, according to the importance of the risks that they can generate. In the United Kingdom, it is the environmental protection bodies\(^1\) that are in charge of the application of the law concerning waste.

Other actors, whose status does not figure in the European directive, are involved in the processes of recovery and waste treatment. These include:

• The **local communities**: In France, the communes and communities of communes are in charge of the organisation of the public service of household waste elimination. In certain cases, they can also take care of the waste of companies located on their territory. In the United Kingdom the municipalities are also referent actors in waste treatment (grouped in « waste collection authorities »\(^2\) and in « waste disposal authorities »\(^3\))

• The **territorial bodies**: In the United Kingdom, there are a number of differences between nations concerning waste treatment, each nation being able to establish specific rules on its own territory. In France, the NOTRe law (2015) transferred to regions the ability of planning for non-hazardous waste, formerly assigned to departments. The different actions carried out on the territory for the treatment and recovery of waste are now part of the Regional Plan for Prevention and Non-Hazardous Waste Management.

• In the United Kingdom, the different **Environmental protection bodies** are responsible for the application of the waste treatment legislation.

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\(^1\) Every nation has its own agency: *Environment Agency (EA)* in England, *Natural Resources Wales (NRW)* in Wales, *Northern Ireland Environment Agency (NIEA)* in Northern Ireland, *Scottish Environment Protection Agency (SEPA)* in Scotland

\(^2\) *Waste collection authority (WCA)*: Local authority in charge of collecting municipal waste in the United Kingdom.

\(^3\) *Waste disposal authority (WDA)*: established in the United Kingdom following the 1990 Environment Protection Act, these authorities are in charge of managing the waste collected by the local councils and are responsible for the elaboration of the implementation of management plans for municipal waste.
2. **Synthesis of the regulatory issues to consider for the purpose of waste recovery**

2.1 « The life of waste » (Recuperation / Transport / Storage / Treatment / Transformation)

2.1.1 Obligations of the waste producer

The European directive 2008/98/CE determines a certain number of obligations for the waste producer as well as for its possible holders, which have been transposed into the French law and British law. These obligations are as follows:

- **Prevention:** Anyone having a waste-producing activity is required to take measures even before a substance or product becomes waste, in order to limit:
  - The amount of waste generated during the production process;
  - The harmfulness of this waste on the environment and human health;

- **Recovering, sorting:** The waste producer must act in favor of their valuation: sorting, choice of treatment channels according to the regulations, etc. are all the obligations to which the producer must submit;

- **Transparency and traceability:** Waste producers must provide information on the production, collection, transport, treatment and disposal of the waste they generate. Keeping Waste Monitoring Forms (BDS: Bordereau de Suivi) allows accurate tracking of waste management steps. This notion, introduced by the European directive 2008/98/CE, aims to empower waste producers;

- **Extended producer responsibility:** « Every company is responsible for managing the waste it produces and/or holds until it is disposed or ultimately recovered, even when the waste is transferred to a third party for processing. It must ensure that their disposal complies with the regulations. ». The waste producer is therefore responsible for the waste until its complete elimination or exit from the waste status. The article L541-10 of the Environmental Code extends this responsibility to people involved in the waste management process. It is said that all of these actors are **jointly liable.** Likewise, in the United Kingdom, the Product Stewardship Policy introduces the principle of « **Shared Responsibilities** ». This principle of extended responsibility is in line with the **polluter pays principle**, itself introduced in the European regulation since 1986 with the Single European Act, aiming to bring all costs resulting from measures of prevention, reduction and fight against pollution by the person at the origin of the waste.

2.1.2 Hierarchy of different waste treatment methods

The European directive 2008/98/CE introduces the concept of **hierarchy of waste treatment methods**, that must prevail by default in any decision relative to waste management. The following waste management methods are listed in order of priority:

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4 In accordance with art. L541-2 of the French environment code: « The elimination of waste includes the operations of collection, transport, storage, sorting and treatment necessary to the recuperation of reusable elements and materials or of energy, as well as the deposit or release in the natural environment of all other products in determined conditions to avoid nuisance. »
• **Prevention**: The best way to treat waste is to reduce its production as much as possible. The prevention of waste requires anticipation, from the conception of the products whose production creates waste, and then intervenes at all stages of the manufacturing and distribution of the products;

• **Preparation for re-use**: defined by the European directive as « Any operation of controlling, cleaning, or repairing for recovery, whereby waste products or components are prepared for reuse without any further pretreatment », this type of waste treatment often concerns the reactivation of used objects on the second-hand market (household appliances, vehicles, furniture, etc.);

• **Recycling**: defined by the European directive as « Any recovery operation by which waste is reprocessed into substances, materials or products for their original purpose or other purposes », recycling leads to the production of raw material from the recycling process, called recycled raw material (MPR: Matière Première Recyclée). This material can be reintroduced by two ways:
  - **Closed loop recycling**: The recycled raw material will be intended for an identical use as at the origin (ex: recycling glass bottles to produce recycled glass bottles);
  - **Open loop recycling**: The recycled raw material is intended for a different use (ex: recycling plastic bottles into fleece);

• **Recovery**: The guiding principle of recovery is to ensure that waste is used for useful purposes as a substitute for other substances or articles that would have been used instead. This principle concerns for example the "energetic recovery", in which waste is used as a substitute for fuels for the production of heat or energy;

• **Elimination**: Defined as the waste treatment process to be used in last resort, this treatment method can consist of landfill disposal, burial or incineration without energetic recovery. In the case of waste treated by elimination, it is called “ultimate waste”, to the extent that it is no longer likely to be reused or recovered by technically practicable processes.

### 2: The legal difference between recycling and different types of reuse in French law

The definition of the "preparation for re-employment" suggested by the European directive can lead to confusion, to the extent that it does not differentiate two types of reuse, that are clearly distinguished in French law. The different types of reuse as defined in French law are also mixed and used in a wrong way in common language.

Reuse as « **réemploi** » is defined as « any operation by which non-waste products or components are used again for the same purpose for which they were designed ». « Réemploi » is therefore a means of prevention, aiming to prevent a product from being classified as waste.

Reuse as « **réutilisation** » is defined in the Environmental Code as « Any operation by which substances, materials or products that have become waste are used again ». It therefore concerns goods that have already acquired the status of waste.

**Application example: a wooden cupboard:**

If the owner of a cupboard no longer wishes to keep it as it is, but decides for example, to repaint it with the intention of selling it or giving it away. This would be « **réemploi** » the cupboard never acquires the status of waste.
On another hand, if the owner disposes of the cupboard on a landfill, and that it is recovered by a third person who repairs it and repaints it in order to use it for his owns needs, then it would be «réutilisation»: the cupboard has momentarily acquired the status of waste.

Finally, if the cupboard is placed in a landfill and disassembled, and the boards that composed it are used for the manufacturing of another object, then it would be recycling.

The objective of this hierarchy of waste treatment methods is to privilege the waste treatment methods presenting the lowest environmental impact.

In the facts, there is no case law on the application of the hierarchy of waste management methods in the national law of EU member States. In addition, the European directive and its respective transpositions in French and British law provide the possibility of granting derogations «if economic, social or environmental reasons exist ».

In France, there is no formally defined process to obtain such a derogation for a waste producer or owner. The nature of the documents to be provided to justify the non-respect of the hierarchy is not clarified. Therefore, « it seems unlikely that a waste producer or owner will need to justify the respect of the hierarchy». In England, the government has defined three types of flows for which it is recommended to derogate from the hierarchy. Beyond these recommendations, there is no official procedure to obtain a derogation or to control and punish eventual offenders.

2.2 End-of-waste

2.2.1 European regulation

All operations of waste recovery, as defined above, lead to a change of status. This change can take two forms: a requalification in a by-product, or an end-of-waste procedure (SSD: Sortie du Statut de déchet).

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The possibility to requalify a material (usually considered as waste) into a by-product allows to avoid the waste status and thus allows an easier reuse of the material, in the context of a less strict regulation. The energetic transition law for green growth (TECV: Transition Énergétique pour la Croissance Verte) of the 17th August 2015 has since instaured national criteria, that can only be established by case law on a national level. Every by-product is subject to a specific official decree.8

**The end-of-waste**

The end-of-waste concept has been introduced as follows by the European directive 2008/98/CE: **« Waste ceases being waste, when it has undergone a recovery or recycling operation and meets specific criteria to be defined in compliance with the following conditions:**

a) *The substance or object is currently used for specific purposes;*
b) *There is a market or demand for such a substance or object;*
c) *The substance or object fulfills the technical requirements for specific purposes and complies with the product regulation and standards;*
d) *The use of the substance or object will not have global harmful effects on the environment or human health. »*

The end-of-waste process introduces the possibility, for a good qualified as waste, **to become a product again.** This change of status namely allows to put an end to the constraints linked to the responsibility of the waste producers regarding their treatment and disposal, which responsibilities are often put forth by professionals as a brake to recycling, reuse and recovery.9

The end-of-waste is recognised only after an official procedure that verifies the respect of the four conditions stated by the European directive and listed above, and carried out either by institutions, or by individuals. This procedure results in the publication of requirements listing criteria that are specific to the material concerned. The criteria listed in the requirements must be satisfied by all the operators disposing the same material and willing to make it lose its waste status to rehabilitate it as a product. The producer of materials that has been subject of an end-of-waste procedure at the European level must be able to deliver a conformity certificate for each lot of products. This conformity will have to be evaluated by an accredited actor.10

To this day, few products have been subject to end-of-waste procedure demands: in 2016, only iron, steel, aluminium and copper scrap and glass cullet had been subject to an end-of-waste procedure and lead to harmonious regulations on the European level. Procedures are in progress for waste coming from construction and used oils.

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8 All the decrees may be consulted here: [https://www.legifrance.gouv.fr/](https://www.legifrance.gouv.fr/)
9 According to the FEDEREC study operated in France in 2013, and according to the study « *Construction and demolition waste management in United Kingdom* » operated in 2015 by Deloitte and updated in 2016.
10 Any company that has obtained an accreditation to proceed to the audit and the certification of waste management systems is authorized to deliver a conformity certificate.
The European end-of-waste procedure remains therefore limited, both by its remaining limited field of application as by its complexity, which can discourage the waste producers. The following list details the principal limits to the end-of-waste European process:

- The end-of-waste procedure suffers first of all from a lack of harmonisation between the European Union countries. If the benefit of an end-of-waste procedure on the European level lies mainly in the fact that it applies to all Member States, it however requires a long process, and can only concern, given the current situation, a restriet number of waste flows.

- Hence, some countries have taken the initiative of creating their own rules of end-of-waste for some types of materials. It is therefore necessary to distinguish two end-of-waste levels: the European level (following the principles determined by the directive 2008/98/CE and mentioned above, identical in all of the European Union), and the national level (determined by the laws of each Member State).

- These different regulation levels lead to a multiplicity of competent authorities for the authorisation of the end-of-waste. Because of the disparities between national procedures, the products that are recognised as no longer waste in a country are not necessarily recognised as such in third countries: the access to the European market for such products is therefore often blocked, as far as they keep their status of waste from the point of view of the European regulation.

2.2.2 Cross-analysis of the similarities and differences between French and British standards

The influence of legal practices on the development of the end-of-waste procedure

There are important differences between the French and British legal systems. These differences impact on the way the end-of-waste procedures are developed and executed on a national level.

The British legal system grants a central place to case law. The United Kingdom therefore tends to formulate criteria faster, even if it means revising them later on if necessary (technological evolutions, market structure changements, accidents with materials originated by end-of-waste, etc.) 11. If the British iterative process12 contains legal instability risks, it has however enabled the United Kingdom to be today more advanced than France in the end-of-waste process (end-of-waste criteria and procedures are implemented for a larger number of products).

In France, the case law culture is far less developed, and the administration tends to last longer and longer to develop criteria, favoring their continuity to their speed of implementation. In France, the end-of-waste concerns therefore a reduced number of products. The specific procedures of the two States are detailed hereunder:

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https://www.record-net.org/storage/etudes/12-0147-1A/rapport/Rapport_record12-0147_1A.pdf

12 Procedure of problem solving by the successive proposition of approximative solutions, that after ameliorations and corrections, enable to get gradually closer the ideal solution
French procedure: The national replica of the European procedure and its complexities

In France, the national end-of-waste procedure is a replica on the national level of the European procedure: the end-of-waste can be authorised after the same validation process (respect of the four criteria\(^\text{13}\) mentioned above) as at the European level. This procedure is long, costly and complex to carry as the professionals involved do not benefit from any administrative support and have to face high requirements to ensure the successful completion of the process. The competent authority to adjudicate this request is the local prefect when the request relates to a specific waste recovered in a specific installation. The end-of-waste criteria are then fixed by a prefectural decree and can in this case be fixed for a determined period. However, it is the Minister of the Environment that adjudicates on this authorisation if the request relates to a category of waste, after consulting the consultative Commission of the status of waste. This Commission, composed of twenty members, gathers State representatives, professionals, environmental protection associations, consumer and user associations and thematic experts. The current composition of the Commission has been decided on the 30th August 2017 for a 5-year mandate\(^\text{14}\). All of the information relative to the entry and functioning of this consultation is presented in the article 1 of the Decree n° 2012-602 of the 30th April 2012 relative to the end-of-waste procedure\(^\text{15}\).

United Kingdom: evaluation of the end-of-waste and Quality Protocole, the coexistence of two complementary procedures.

In the United Kingdom, if the waste holder wishes to obtain an end-of-waste, he must carry out an end-of-waste test. To do so, two procedures are available to him:

- He can carry out an end-of-waste assessment, which is in all aspects a replica on a national level of the European end-of-waste procedure, except that it is the Court of Appeal that adjudicates on the possibility of end-of-waste on a national level.

- There is moreover a procedure specific to the United Kingdom enabling the end-of-waste: the waste holders can comply with a Quality Protocol (QP). There is a specific QP for each type of waste, that determines a serie of requirements with their treatment for the end-of-waste. The QP are often updated according to the technological advances, and the updated versions of these QP are published on the british government website\(^\text{16}\). The use of QP is a voluntary procedure left to the initiative of waste holders, and encouraged by the different Environmental Regulators, these being the authorities in charge of executing the end-of-waste via the quality protocols. Note that differences exist between the British nations in terms of QP. Thus, the Scottish Environmental

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\(^\text{13}\) Cf part 2.2.1 Regulation on a Europen level, page 8


\(^\text{15}\) https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000025789260&dateTexte=&categorieLien=id

Protection Agency (SEPA) does not automatically recognise the validity of the quality protocols employed in other British Nations.

Support to actors through their procedure in France and in the United Kingdom

Beyond the differences in French and British administrative procedures relating to end-of-waste, there are also differences in the support to waste holders in their procedures.

In France, there is no implemented assistance or accompanying structure for waste producers wanting end-of-waste. In the United Kingdom and linked to the existence of a specific Quality Protocoles procedure, there are more support measures. Thus, between 2011 and 2015, the EQual Program (partly financed by the LIFE+ European Environmental Program), made it possible to simplify and promote the end-of-waste on a national level. This Program has supported producers and waste management companies, recycled materials users and regulators in their procedure in relation with the end-of-waste by providing the online tools and techniques to help them determine if their new products complied with the new regulatory standards. For example, the It Is Waste tool, launched in November 2014, allows users to self-evaluate their actions and their compliance with the end-of-waste requirements for reuse, in England. This tool provides an indicative result on the status of waste, which may subsequently be submitted to the Environment Agency for notice. There is also a tool named Quality Protocol Checker, enabling waste holders to ensure the respect of standards stated by the QP, and therefore contributes to the maximisation of the end-of-waste process effectiveness.

2.2.3 The implicit end-of-waste

Given the complexity of the end-of-waste procedure, and similarly to what the waste owners were doing before the introduction of the European directive 2008/98/CE, there is an “implicit” end-of-waste procedure. In a number of cases, the European administration or case law has recognized that waste could be reused or recycled as products without the need of a specific administrative procedure. The implicit end-of-waste only applies to production processes in which is introduced waste to replace new raw material. The produced substance or object must be identical to the one produced without waste. Subject to compliance with the REACH regulation, the produced substance or object does not have the status of waste, even though some elements introduced in the production process may effectively be considered as waste.

In opposition with the “explicit” end-of-waste, which takes place in waste treatment facilities, the implicit end-of-waste takes place in manufacturing facilities, that use waste to replace raw material. The “manufacturing facilities” are understood as facilities listed in the ICPE nomenclature. In the current state of the regulations, only implicit end-of-waste that took place in this kind of facilities are officially recognised.

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17 The REACH Regulation (Registration, Evaluation, Authorization of Chemical products) aims for a better protection of human health and of the environment against risks linked to chemical substances, while favoring the competitiveness of the chemical industry in the EU. [https://www.entreprises.gouv.fr/secteurs-professionnels/chimie/reglement-reach](https://www.entreprises.gouv.fr/secteurs-professionnels/chimie/reglement-reach)
in France: there is no official recognition of the integrity of objects resulting from a manufacturing process causing implicit end-of-waste that did not occur in an ICPE.

The introduction of this possibility of implicit end-of-waste reaffirms the desire to move from a waste treatment logic to a logic of resource management. It is also a wish stated at the European level, that presented on the 2nd December 2015, the «European Package on circular economy», aiming to simplify the constraints that weigh on waste management.

In France, although it was subject of a notice published in the official newspaper by the Minister of Ecology on the 13th January 2016, the implicit end-of-waste procedure remains unclear and contains inaccuracies concerning in particular the practical modalities of its realisation. There is no British or European equivalent to the 13th of January decree.

Figure 2: Synthesis of the different end-of-waste procedures

2.3 The end-of-waste leads to fewer constraints linked to waste transport, storage and transformation

The end-of-use enables a partial constraint relief relative to the recovery of the waste material. As previously mentioned, the end-of-waste, whether implicit or explicit, can only take place under certain conditions. Therefore, as long as the end-of-waste has not been announced, the waste management must respect the usual regulatory imperatives, namely concerning their transport, storage, certification, traceability and transformation. Hence, the waste transport between where it has been generated and where it will benefit end-of-waste (waste treatment facilities for the explicit end-of-waste, and ICPE for the implicit end-of-waste) remains subject to the regulations specific to waste transport.

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However, once the end-of-waste has been announced, it is the regulation specific to the nature of the product that must be applied (and not specific to waste). Likewise, finished objects resulting from a production integrating waste (and thus leading to an implicit end-of-waste) is not subject to the regulatory obligations concerning waste management.

Therefore, all of the regulatory obligations presented hereafter do not apply to products « coming from an end-of-waste ».
3. The impact of the regulation on the activities of the actors of the sector. The steps to follow to respect the applicable laws

This part of the note is destined to manufacturers of building material, that are interested by using raw material resulting from recycled waste, whether they operate this transformation by themselves or not. We are here analysing the problematics that can merge at different stages of the production and commercialisation process of an isolation material manufactured from recycled textiles and/or terracotta:

1. The waste transport regulation from their deposit to their processing unit;
2. The registration of the waste storage and transformation site to the public authorities;
3. The composition of a tracking record to ensure the traceability of waste;
4. Technical evaluations and applicable certifications for the commercialisation of isolants based on waste.

3.1 Waste transport regulation from their deposit to their processing unit

3.1.1 France

The transport of dangerous and non-dangerous waste is regulated by the Environment Code (articles R541-50 to R541-54). The companies desiring to transport more than 500kg per non-dangerous waste loading must deposit a declaration to the prefect of the department. This declaration must be renewed every 5 years. A material manufacturer wishing to use waste as raw material can also resort to a transport company having already filed this declaration. There is a declaration exemption system to which material manufacturers interested by the use of textile or terracotta waste can resort:

- **Possible exemption for textile and terracotta waste**: If because of the waste volume it stores or transforms, a company had to obtain the status of facility classified for the protection of the environment (ICPE classification, cf section 3.2), it does not need to do this additional declaration;
- **Possible exemption for terracotta waste**: If the company transports "waste from bricks, tiles, ceramics", then it does not need to do this declaration (article R451-50)

3.1.2 England

In England, any company transporting waste must make a demand to the Environment Agency to be registered in a specific public register (public register of waste carriers, brokers and dealers). There is no

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18 Environment Code, articles R541-50 to R541-54: https://www.legifrance.gouv.fr/affichCode.do;jsessionid=BAE2DC735A3CC959F44DFBC9D8EC1931.tplgfr30s_2?idSectionTA=LEGISCTA0000062357401&cidTexte=LEGITEXT0000062357401&dateTexte=20120719

19 The declaration form can be downloaded here: https://www.prefecturedepolice.interieur.gouv.fr/content/download/29140/223788/file/Formulaires%20de%20d%C3%A9claration%20d'exercice%20de%20activité%20de%20collecte%20et%20de%20transport%20par%20route%20dans%20la%20r%C3%A9gion%20%20.pdf
minimum threshold beyond which an economic actor must obtain an authorisation, as it is the case in France. If there are also exemption systems, none of them concerns textile or terracotta waste transport\(^\text{20}\).

The British law plans that any person transporting waste controlled without authorisation can be condemned to pay a fine which may be up to £5,000\(^\text{21}\). All details relative to this registration procedure (and in particular its cost, which varies according to the case) are presented on the British government website: https://www.gov.uk/waste-carrier-or-broker-registration.

### 3.2 The registration of the waste storage and transformation site to the public authorities

The integration of waste storage and transformation activities in the production process of a manufacturer can make the classification of its facility to the authorities necessary.

#### 3.2.1 France

As previously mentioned, the facilities presenting a potential danger to public health and the environment must be registered as **Facilities Classified for the Protection of the Environment** to the prefect of the department before their commissioning\(^\text{22}\). According to the severity of the dangers presented by an exploitation there are **three types of classification** (in ascending order of associated constraints): the declaration, the registration and the authorisation. This classification procedure is necessary if the company’s activity corresponds to one of the sector categories, or « **rubrics** », included in the ICPE nomenclature\(^\text{23}\). A single company can be subject to several ICPE rubrics: for example, a material manufacturer wishing to use textile waste for his production must not only deposit a declaration relative to storage, but also classify his facility for its transformation activity. We therefore present separately, for storage and transformation, the cases in which a company is required to demand an ICPE.

**Storage**

A building material manufacturer that would stock waste himself would likely have to ask for an ICPE classification of:

- **Rubric 2714** for textile waste: « Transit, gathering or sorting of non-hazardous waste of paper/cardboard, plastics, rubber, textiles, wood »;
- **Rubrique 2716** pour les déchets de terre cuite : « Transit, regroupement ou tri de déchets non dangereux non inertes » ;

each of these two rubrics, the nomenclature defines the same waste volume thresholds above which a facility enters the ICPE regime.

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\(^{21}\) Control of Pollution (Amendment) Act 1989: [https://www.legislation.gov.uk/ukpga/1989/14/section/1](https://www.legislation.gov.uk/ukpga/1989/14/section/1)

\(^{22}\) [https://www.service-public.fr/professionnels-entreprises/vosdroits/F33414](https://www.service-public.fr/professionnels-entreprises/vosdroits/F33414)

\(^{23}\) [https://aida.ineris.fr/sites/default/files/gesdoc/30296/BrochureNom_v40_public.pdf](https://aida.ineris.fr/sites/default/files/gesdoc/30296/BrochureNom_v40_public.pdf)
ICPE classification regime for the 2714 and 2716 rubrics:

<table>
<thead>
<tr>
<th>Volume susceptible to be present in the facility:</th>
<th>ICPE classification regime</th>
<th>General prescription rubric 2714</th>
<th>General prescription rubric 2716</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Greater or equal to 100 m³ but inferior to 1 000 m³.</td>
<td>Declaration</td>
<td>14/10/10 Decree</td>
<td>16/10/10 Decree</td>
</tr>
<tr>
<td>2. Greater or equal to 1 000 m³;</td>
<td>Authorisation</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

- If a manufacturer stores **between 100 m³ and 1 000 m³** of textile or terracotta waste in order to recover it, he must make a **declaration** to the prefect. The **regulatory constraints** are then relatively **limited**. Indeed, the risk is considered as acceptable, if a series of prescriptions presented as « **standard decrees** ». In the rubric 2714 and 2716, the decrees of 14/10/2010 and 16/10/2010 define the general prescriptions applicable to the ICPE subject to declaration;
- If a manufacturer stores **more than 1 000 m³ of waste**, then he must make an **authorisation demand** and demonstrate the acceptability of the risk. A **prefectoral decree** can then authorise the operation of the facility and sets specific operating constraints on a case by case basis.

**Transformation**

A building material manufacturer that transforms waste into raw materials would likely have to ask for an ICPE classification of:

- **Rubric 2791** for textile waste: « Non-hazardous waste treatment facility »;
- **Rubric 2515** for terracotta waste: « Crushing, grinding, screening... of stones, pebbles, ores or other natural or artificial mineral products or of non-hazardous inert waste ».

**Threshold relative to the quantity of treated waste for the 2791 rubric:**

<table>
<thead>
<tr>
<th>Volume of treated waste:</th>
<th>ICPE classification regime</th>
<th>General Prescription</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Inferior to 10 ton/day.</td>
<td>Declaration</td>
<td>23/11/11 decree</td>
</tr>
<tr>
<td>2. Superior or equal to 10 ton/day;</td>
<td>Authorisation</td>
<td></td>
</tr>
</tbody>
</table>

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25 [http://www.installationsclassees.developpement-durable.gouv.fr/Regime-de-classement.html](http://www.installationsclassees.developpement-durable.gouv.fr/Regime-de-classement.html)

26 14/10/10 Decree relative to the general prescriptions applicable to installations classified for the protection of the environment subject to declaration under the rubric n° 2714. [https://aida.ineris.fr/consultation_document/3983](https://aida.ineris.fr/consultation_document/3983)


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If the manufacturer deals daily with amounts of waste that are inferior to 10 tons, the company must make a declaration (the standards to be respected are registered in the 23/11/2011 decree). If the manufacturer deals with more than 10 tons per day, he must deposit an authorisation demand.

For manufacturers considering transforming terracotta waste, the classification of their site in ICPE depends namely of the electric power needed to make their inert material processing equipment work.

For the 2515 rubric: threshold relative to the electric power of the installations

<table>
<thead>
<tr>
<th>Installed power of the installations:</th>
<th>ICPE classification regime</th>
<th>General prescriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Superior to 40 kW, but inferior or equal to 200 kW</td>
<td>Declaration</td>
<td>30/06/97 decree, (modified by the Decree n°2015-1614 of the 9th December 2015)</td>
</tr>
<tr>
<td>2. Superior to 200 kW, but inferior or equal to 550 kW</td>
<td>Registration</td>
<td>26/11/12 decree</td>
</tr>
<tr>
<td>3. Superior to 550 kW</td>
<td>Authorisation</td>
<td></td>
</tr>
</tbody>
</table>

Between 200 kW and 550 kW, a facility is subject to an intermediate ICPE regime (between declaration and authorisation): the registration. In the same way as for declaration, a registration demand is accepted if the installation respects a set of general prescriptions determined in the « standard » decree (26/11/12 Decree), while also providing for other obligations, like the consultation of municipal councils and the public before the prefect’s decision.

Summary: minimum thresholds for an ICPE classification (all regimes combined) according to the type of operation and of waste:

<table>
<thead>
<tr>
<th>Type of waste</th>
<th>Storage operation</th>
<th>Transformation operation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Textile waste</td>
<td>Volume of waste &gt; 100m³</td>
<td>Quantity of waste &gt; 0 ton/day</td>
</tr>
<tr>
<td></td>
<td>Rubric 2714</td>
<td>Rubric 2791</td>
</tr>
<tr>
<td>Terracotta waste</td>
<td>Volume of waste &gt; 100m³</td>
<td>Electric power &gt; 40 kW</td>
</tr>
<tr>
<td></td>
<td>Rubric 2716</td>
<td>Rubric 2515</td>
</tr>
</tbody>
</table>

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28 23/11/11 decree relative to the general prescription applicable to installation classified for environmental protection subject to the obligation of declaration under heading 2791: [https://aida.ineris.fr/consultation_document/3643](https://aida.ineris.fr/consultation_document/3643)

3.2.2 England

Some installations where waste is stored and recovered must apply for an environmental permit at the Environment Agency\textsuperscript{30}. In a guide published in 2010, the Agency specified the types of installations concerned by this obligation. In this case, the textile and terracotta waste storage and treatment installations do not require the obtention of a permit\textsuperscript{31}.

Indeed, British law created an exemption system for a series of activities relative to waste management\textsuperscript{32}. The use of certain categories of waste for the production of manufactured goods is therefore exempted of environmental permits:

- For terracotta waste, an operator may obtain a permit exemption if he detains less than 100 tons at a time in his facility;
- For textile waste, this limit is 1000 tons.

The legislation specifies certain constraints that must be respected, namely in terms of waste storage. If a company respects these conditions, it can make an exemption request to the Environment Agency on the online portal: \url{https://wasteexemptions.service.gov.uk/}.

This exemption is free and must be renewed every three years.

3.3 The constitution of tracking records to ensure the waste traceability

3.3.1 France

Throughout the value chain of waste, all parties - that is, producers, collectors, transporters, traders, and operators of transit, pooling or waste treatment facilities - are obliged to keep a register containing a set of information on this waste\textsuperscript{33}. The 29 February 2012 decree\textsuperscript{34} sets the contents of these registers for the different types of concerned actors.

A material manufacturer who would undertake to use waste as raw material is likely to perform three types of activities, and thus keep the corresponding registers:

- If a manufacturer collects/transport waste, he belongs to the “waste transporters and collectors” category and must keep a chronological register of the collected or transported waste. The information that must appear in this register are listed in article 3 of the 29 February 2012 decree;

\textsuperscript{30} Source: \url{https://www.gov.uk/guidance/check-if-you-need-an-environmental-permit}
\textsuperscript{31} Environmental Agency (2010) “Understanding the meaning of regulated facility” (p.57).
\textsuperscript{33} Code de l’environnement, articles R. 541-43 et R. 541-46: \url{https://www.legifrance.gouv.fr/affichCode.do;jsessionid=D4866547A6B1BF6BB6AB2C12BC7A821A.tplgfr30s_2?idSectionTA=LEGITEXT000024357355&cidTexte=LEGITEXT000006074220&dateTexte=20171010}
\textsuperscript{34} Decree of the 29th of February 2012 setting the content of the registers mentionned in the R. 541-43 et R. 541-46 articles of the code of the environment: \url{https://www.legifrance.gouv.fr/affichTexte.do?idTexte=JORFTEXT000025454959&dateTexte=20171010}
• If a manufacturer performs an **incoming waste sorting activity**, he belongs to the « operators of facilities of transit, gathering or waste treatment, namely sorting ». He must therefore keep a **chronological register where are recorded all incoming waste**. The information that must appear in this register are listed in article 1 of the decree;

• If the manufacturer **recovers waste**, he must keep a **chronological register of the substances or objects that he has transformed and of the materials that have remained waste**, including the information listed in article 5.

The scheme above summarizes the different recordkeeping requirements for each activity. Given that the information to be included in these registers varies according to the position on the waste value chain (ex: producer, collector, etc.), it is important to note that **one and same person may potentially have to keep several registers if they conduct different activities**. Therefore, if a building material manufacturer uses waste that he recycles and takes charge of the transport and sorting of this waste, he must keep at least three registers to respect the legislation relative to the traceability of waste in France. These registers **must be preserved for at least three years** and must be made available to the authorities in a paper or computer format.

The penalties in case of failure to comply to these obligations (no presentation of waste tracking records, allocation of transport to unauthorized actors etc.) can reach 2 years of imprisonment and a 75 000€ fine.

*29 February 2012 decree setting the content of the registers mentioned in the articles R. 541-43 et R. 541-46 of the Environment Code: https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000025454959&dateTexte=20171010*

**Figure 3: Traceability of waste according to the type of actor**
NB: Inert and textile waste are considered as non-hazardous (if they are not contaminated by other substances): they are not concerned by the tracking records\textsuperscript{35} obligation that applies for dangerous or asbestos waste.

3.3.2 England

In England, the legislation focuses on the steps of waste transfer between two parties. The text of law Environmental Protection Act 1990\textsuperscript{36} made the reporting of a waste transfer note obligatory for two actors exchanging waste, whatever its nature (including non-hazardous waste). The British government published in 2016 a code of good practice\textsuperscript{37} that specifies the information that must be registered in this document (ex: type of waste, quantity, container type, date and place of transfer, etc.). These transfer notes may be directly completed online: www.edoconline.co.uk.

3.4 Technical evaluations and applicable certifications for the commercialisation of isolants based on textile and terracotta waste.

To distribute its products to building professional, a manufacturer must demonstrate the reliability of the materials he sells. The evaluations and certifications that will allow him to grant a minimal quality level to his clients and condition the access of construction managers to decennial liability insurance. In this part, we present first of all the different types of evaluation and certification that a manufacturer can or must do to carry out the commercialisation of a material, in order to show how these technical and normative documents are essential to the insurance of the construction manager.

3.4.1 Technical evaluations and certifications

The obligatory European evaluations: The CE marking and European Technical Evaluation (ETE)

To be placed on the market, construction products must comply with the requirements of the European regulations and directives, among which the Construction Product Regulation (Règlement Produit de Construction: RPC 305/2011)\textsuperscript{38}. Most of the construction products, including thermal insulators, are subject to this regulatory framework and must therefore obtain CE marking\textsuperscript{39}. A manufacturer may obtain this certificate by proving the conformity of its product with a harmonized standard that defined the necessary characteristics for the commercialisation of such a product in Europe\textsuperscript{40}. If the material in question is not covered by an existing harmonized standard, the manufacturer must make a request of a European

\textsuperscript{36} Environmental Protection Act 1990: http://www.legislation.gov.uk/ukpga/1990/43/contents
\textsuperscript{39} Source: http://evaluation.cstb.fr/fr/marquage-ce/
\textsuperscript{40} Harmonized standards are available on the RPC platform: http://www.rpcnet.fr/index.php.
Technical Evaluation (ETE) which certifies the technical performance of the material for a given use (the ETE is gradually taking over from the European Technical Approval (Agrément Technique Européen: ATE) and fulfills the same function)\(^{41}\). Because no harmonized standard exists today for recycled textile or terracotta insulation, a manufacturer must obtain an ETE in order to obtain a CE marking and being able to commercialize his product on the European market.

**Voluntary evaluations in France**

- The Technical Notice and Technical Application Document

The Technical Notice and Technical Application Document are assessments made expert committees led by the Scientific and Technical Centre for Construction (CSTP: Centre Scientifique et Technique du Bâtiment) that report the suitability of a material for a given use. We talk about Technical Application Document when the material is CE marking, and Technical Notice if not. For thermal insulants, a manufacturer can therefore make a Technical Application Document request.

- Technical Appreciation of Experimentation

The Technical Appreciation of Experimentation is an evaluation procedure faster than the Technical Notice and Technical Application Document, aiming to promote the innovation in construction. It is often used before a Technical Notice request\(^ {42}\). It allows to bring tangible elements on the reliability of a material when the two other notices are not possible yet, namely when there is not enough experience feedback\(^ {43}\).

**The certification in France**

The certification is a voluntary procedure that guarantees the user the consistency of manufacture of a product and of its performances. In France, for insulation products it is ACERMI certification. Since 2008, the insulant materials based on biosourced fibres may require an ACERMI certification. Insulation materials manufactured based on recycled textiles such as the range Métisse of the company Le Relais have already obtained an ACERMI certification (2014)\(^ {44}\).

**The access for construction managers to insurance and to incentive schemes of the State**

In France, since 1978\(^ {45}\), the project manager of a construction site is responsible for any damage occurring after acceptance for the work, for 10 years. He must therefore subscribe to a decennial liability insurance to cover the guarantee he owes to the construction manager.

This is why the implementation of materials must fit the scope of the clause so-called « common technique » of decennial liability insurance\(^ {46}\). Each insurance society has its has its own definition of « current technique

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\(^{41}\) Source: [http://evaluation.cstb.fr/fr/evaluation-technique-europeen/](http://evaluation.cstb.fr/fr/evaluation-technique-europeen/)

\(^{42}\) Source: [http://evaluation.cstb.fr/fr/appreciation-technique-expertise-atex/](http://evaluation.cstb.fr/fr/appreciation-technique-expertise-atex/)


\(^{44}\) Source: [http://www.isolantmetisse.com/rubriques/notre-engagement-qualite](http://www.isolantmetisse.com/rubriques/notre-engagement-qualite)

\(^{45}\) Law n° 78-12 of the 4th January 1978 relative to the responsibility and to the insurance in the field of construction: [https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000522720](https://www.legifrance.gouv.fr/affichTexte.do?cidTexte=JORFTEXT000000522720)

» but they must meet the recommendations of the **Products Prevention Commission** (Commission Prévention Produits (C2P)) implemented by the **Construction Quality Agency**. A technique normally becomes « common » if it benefits of a European Technique Evaluation, a Technical Notice /Technical Application Document, or a Technical Appreciation of Experimentation with a favorable opinion.

If a material and its application mode do not benefit of one of these technical evaluations, they then belong to the « **non-common techniques** ». A construction manager wishing to use this product on the construction field will then have to require an **extension of guarantee** to his insurer. This request can generate an additional bonus, but it is not always the case. The construction manager and the insurer **negotiate together the amount of the insurance**, taking namely into account his professional experience and the intended use of the material (ex: higher risk if using the material in structure). The characterisation of a product as « non-common techniques » is therefore not a brake to its sale but **may constitute an obstacle if it leads to additional insurance bonuses**.

The following scheme illustrates the influence of technical evaluations on the procedures for accessing insurance for the construction managers.

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**Figure 4:** The technical evaluations: factor of access to insurance for construction managers and commercial argument for the manufacturers

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47 [www.qualiteconstruction.com](http://www.qualiteconstruction.com)

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The certifications by type of product are also essential for the commercial development of an innovative product. They are in particular required in order to benefit from certain fiscal advantages aiming to promote the implementation of sustainable construction materials and techniques. Therefore, the ACERMI certification for insulation materials is required for the obtention of numerous incentive devices such as the Energy Economy Certificate (Certificats d’Economie d’Energie (CEE)) or the Tax Credit for the Energy Transition (Crédit d’impôt pour la Transition Énergétique (CITE)).

The obtention of the ACERMI therefore opens news markets to a new manufacturer having developed an innovative product.
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• www.qualiteconstruction.com;
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