



CONSEIL NATIONAL DE L'EMBALLAGE

Des partenaires pour le meilleur de l'emballage

# **Eco-design & Packaging**

## **Methodological Guide**

## Summary/objectives

The term “eco-designed” is sometimes misused and can have a multi-faceted definition. It then becomes difficult to convey a clear message of prevention to:

- Companies: how can they use the term “eco-designed”? (whether they are packaging manufacturers, packagers or distributors)
- Consumers: what is an eco-designed product and/or packaging?

The Conseil National de l’Emballage (French Packaging Council), also called CNE, has been bringing together actors of the packaging line since 1997. Its mission is to develop and disseminate best practices related to the design, marketing and use of the packaging of a product.

In 2000, the CNE published the guide “mise en œuvre de la prévention lors de la conception et de la fabrication des emballages” (*“the implementation of prevention when designing and manufacturing packaging”*).

Methods have been improved, more tools for companies have become available and sustainable development has been integrated into business strategy over the last few years. Thanks to these factors, coupled with legal/regulatory provisions:

The CNE provides this methodological guide for companies in order to facilitate the “eco-design” of packaging and to reduce its impact on the environment during its life cycle. The objectives are:

- **Reminding companies** of “eco-design” definitions and rules
- **Revisiting** questions to keep in mind for a “virtuous” development of packaging
- **Suggesting relevant criteria** for the selection of tools in order to help potential users make a decision, according to the aims pursued.

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## 1. Introduction

As sustainable development is increasingly integrated into business strategies, the CNE has updated its guide and the questions that should be considered for a responsible development of packaging.

The prevention of packaging waste is the priority of European Directive 94/62/EC transposed into the French Environmental Code, as well as Directive 2008/98/EC.

Law No. 2009-967 for programming the implementation of the Grenelle for the Environment confirms the priority given to prevention. The associated national objectives have been set out to reduce the production of household and similar waste (-7% per capita over the next 5 years).

The CNE recalls that eco-designed packaged products must integrate the entire life cycle of the packaged product; it constitutes a functional approach which encourages reflection on the product itself and the roles of packaging.

The following basic rules are thus to be taken into account:

- Analysing the product and its packaging
- Assessing the entire packaging system (primary, secondary, tertiary and upstream packaging)
- Taking into account the entire life cycle of the packaged product
- Ensuring that the consumer keep an acceptable use value<sup>1</sup> of the packaged product
- Determining the critical point which will make it impossible to reduce the weight or volume of packaging for a given material.

It is important to use similar materials in order to guarantee the reduction of environmental impacts. This is part of a more restricted approach compared to eco-design, because it is only related to prevention by source reduction, as defined by standard EN 13428.

The CNE recalls that the packaging of a product must comply with hygiene, health and safety regulations: the reader should refer to the document "*Packaging, health, hygiene and safety*"<sup>2</sup> for more information on the standards and regulations in force.

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<sup>1</sup> Definition of acceptability (in French) : [http://www.conseil-emballage.org/Img/Publications/47\\_1.pdf](http://www.conseil-emballage.org/Img/Publications/47_1.pdf)

<sup>2</sup> [http://www.conseil-emballage.org/Img/Publications/71\\_1.pdf](http://www.conseil-emballage.org/Img/Publications/71_1.pdf)

## 2. Context

### 2.1 Facts and data

This document does not only deal with eco-designed packaging for households, but all packaging issued in France. In 2009, packaging accounted for 9.8 million tons (except for wood packaging) from which 4.8 million tons were household packaging (compared to respectively 9.4 and 4.9 million tons in 1997). Packaging facilitates the service, marketing and use of the product by the consumer, and is part of the social indicators of every society. The development of tonnage can be explained thanks to the following concomitant effects:

- A growing population<sup>3</sup> (from 58 million in 1997 to 64.3 million in 2009)
- An increase in the number of households (from 24 million households in 1999 to 27 million in 2008)
- A decrease in the average size of households (from 2.6 individuals per household in 1990 to 2.3 individuals per household in 2008), hence a reduction of the formats of packaging
- An increase in the number of households of one and two individuals (from 56.7% of households in 1999 to 66% of households in 2008), hence an adjustment of packaged products depending on the needs of households
- An increase in the consumption on-the-move
- Individualization of consumption (single servings).

Meanwhile, the industrial sector has made optimization efforts especially regarding prevention by source reduction (see collection of prevention cases on the CNE website).

### 2.2. Rules and regulations

#### Prevention principle

Since 2005, **the prevention principle has been inscribed in the French Constitution** through Article 3 of the Charter for the Environment: "Every individual must, in accordance with the conditions determined by law, **prevent violations** which he/she may **cause to the environment** or, in the absence thereof, limit the consequences of his/her actions."<sup>4</sup>

The prevention principle is also one of the general principles of the Environmental Code which says:<sup>5</sup> "producers, importers or exporters must justify that the waste created, at any stage of the process, by the products they manufacture, import or export can be handled in the conditions described in Article L. 541-2. The administration is entitled to ask for any useful information on the management methods and on the consequences of their implementation."<sup>6</sup>

It also implies the **implementation of rules and actions** in order to **anticipate any violation to the environment**. These rules and actions must take into account the latest technical progress.

<sup>3</sup> INSEE statistics (French Statistics Office)

<sup>4</sup> Article 3.

<sup>5</sup> Article L110-1.

<sup>6</sup> Article L. 541-9.

## European Directive 2008/98/EC<sup>7</sup>

It defines a hierarchy of waste processing, and thus makes prevention a priority in law and politics as regards the handling and the processing of waste:

- **prevention**
- preparing for reuse
- chemical, mechanical and organic recycling
- other types of recovery, especially energy recovery
- disposal.

It also gives a definition of prevention, as stipulated in Article L. 541-1-1 of the Environmental Code:

*“**Prevention:** measures taken before a substance, material or product has become waste, when these measures encourage the reduction of at least one of the following elements:*

- the quantity of waste generated, even though the reuse or the prolongation of the period of use of a substance, material or product;*
- harmful effects of waste on the environment and on human health;*
- the levels of harmful substances for the environment and human health in any substance, material or product;”*

## Regulations and packaging

### European Directive 94/62/EC<sup>8</sup>, regarding packaging and packaging waste

It defines the prevention of packaging waste as “the reduction of quantity and harmful effects for the environment of:

- a material or substance used in packaging and packaging waste;*
- packaging and packaging waste during production, marketing, distribution, use and disposal...”*

Furthermore, the directive lays down **essential requirements** and indicates that only packaging complying with these requirements can be allowed on the European market.

These requirements regard the prevention by source reduction of packaging and take into account the recovery of used packaging from its conception.

Therefore, it is to be noted that *“packaging will be produced in a way that will limit its volume and weight to **the minimum needed to meet with the required level of safety, hygiene and acceptability**, for the packaged product as well as for the consumer.”<sup>9</sup>*

### Programming Law No. 2009-967<sup>10</sup>

It makes the prevention of waste production a priority<sup>11</sup>. In this perspective, the national objectives aim at reducing the production of household and similar waste by 7% per capita over the next five years and increasing the **recycling of materials** and organic recycling to reach in **these sectors a 75% rate** of household packaging waste and common business waste, including industrial packaging waste, as soon as 2012.

<sup>7</sup> Directive transposed into the Environmental Code in 2010.

<sup>8</sup> Directive modified by Directive 2004/12/EC.

<sup>9</sup> Appendice 2 of Directive 94/62/EC on packaging and packaging waste

<sup>10</sup> Law of August 3, 2009 called Grenelle I.

<sup>11</sup> Article 46.

## Other rules encouraging eco-design

### The Extended Producer Responsibility Principle (EPR)

In France, the principle of the handling of all or part of waste management by the economic stakeholders, producers and distributors who put products generating waste on the market appears at Article L. 541-10 of the Environmental Code:

*"On the grounds of the extended producer responsibility principle, producers, importers and distributors of these products or elements and materials used in their manufacturing, can be required to provide with or contribute to the management of waste coming from these products."*

The extended producer responsibility principle is one of the means available to support the design and manufacturing of products according to processes which take into full consideration and facilitate an effective use of resources during their entire life cycle. This includes sectors such as repair, reuse, dismantling and recycling and does not endanger the free movement of goods within the internal market.

### The 2001 Law on New Economic Regulations (NRE in the French abbreviation)

The law<sup>12</sup> states that French companies quoted on a regulated market are compelled to chart their social and **environmental** management through their activities in their annual report: "It also includes information, the list of which is established by decree of the Council of State, about the way a company takes into account social and **environmental consequences** of its activity."

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<sup>12</sup> Article 116.

## 2.3 Standards

### 2.3.1 Eco-design

To date, an international document which has the value of a standard exists. It is called "*Environmental Management – Integration of environmental aspects in the design and development of a product*": it is Standard **ISO/TR 14062: 2002**; it describes concepts and practices to **integrate environmental aspects** in every **approach of design and development** of a product or service.

This standard does not register the monitoring process undertaken by the company or certification.

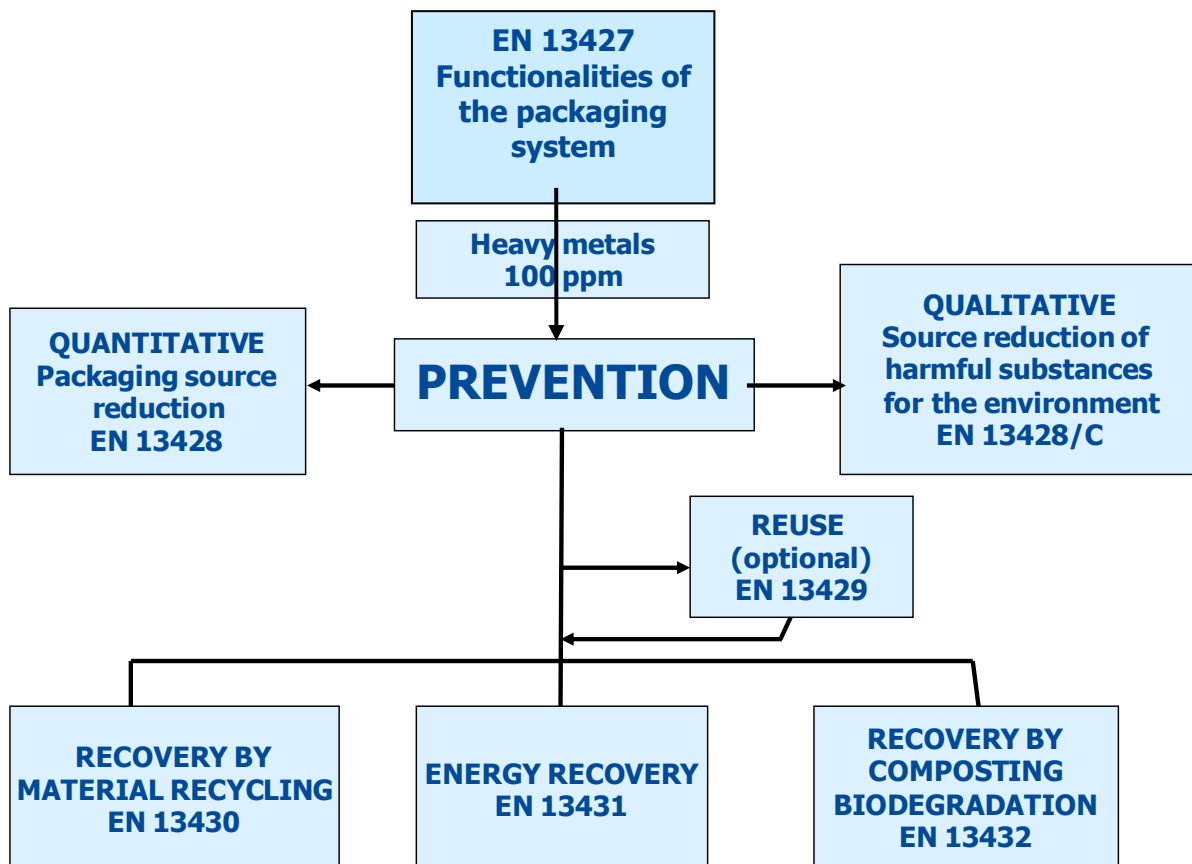
### 2.3.2 Functionalities of the packaging system

The presumption of conformity of packaging to the essential requirements of European Directive 94/62/EC can be established thanks to a series of standards set up by the European Committee for Standardizations (CEN in the French abbreviation) and published in the Official Journal of the European Union, on February 19th, 2005.

Standard NF EN 13427 "Functionalities of the packaging system" specifies the procedure of standard use for the implementation of technical documentation.

Prevention by source reduction is dealt with in Standard NF EN 13428.

The following diagram is a good example of the rules applicable to packaging and packaged products:





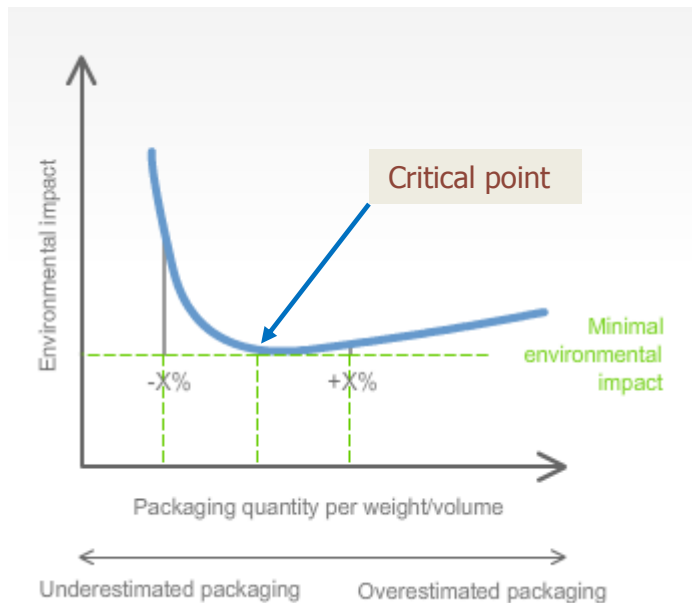


Diagram: Source Fost-plus

Source reduction is assessed through the identification of “critical point(s)”. Establishing a “critical point” shows that an additional reduction of weight and/or volume of packaging would endanger at least one main functionalities called “performance criteria”.

### 2.3.3 Life Cycle Assessment (LCA)

Life cycle assessment is an environmental assessment tool with several criteria regarding the entire life cycle of a product. A series of **ISO 14040** standards have been published for the methodology of this analysis.

### 2.3.4 Environmental information

Communication of continuous improvements and of the reduction of environmental impacts is a practice which can be used by a company: standards have been developed to express environmental information in the best possible way:

- **NF EN ISO 14020:** “Environmental Labels and Declarations – General principles”
- **NF EN ISO 14021:** “Environmental Labels and Declarations – Environmental self-declared claims (labels type II)”
- **NF EN ISO 14024:** “Environmental Labels and Declarations – Environmental labels type I (Eco-labels) – Principles and methods”
- **NF EN ISO 14025:** “Environmental Labels and Declarations – Environmental declarations type III - Principles and operating methods”

## 3. Eco-design and Packaging

### 3.1 Benefits

Eco-design is a way to:

- Act to reduce the impact of products on the environment
- Reconsider existing products, their distribution and use
- Identify and control the risks and costs associated with the entire life cycle
- Be a source of optimization and reduction of the costs related to transportation, raw materials and packaging
- Preempt the weak signals transmitted by stakeholders such as ordering parties, consumer associations, associations for the protection of the environment and public authorities
- Anticipate any regulatory changes and to prepare for them
- Use the environment as an internal management tool in innovative and creative processes
- Give meaning by bringing a positive image of the company, both internal (employees' pride) and external (image of the company in civil society) when the approach is sincere and strong
- Make it a real source of differentiation and innovation in a competitive world and thus to recruit new customers and penetrate new markets.

### 3.2 Definitions

#### 3.2.1 Regulatory definition<sup>13</sup>

*"The integration of environmental characteristics in the design of the product in order to improve the environmental performance of the product throughout its life cycle". In the interest of sustainable development, **continuous improvement** of the overall environmental impact of those products should be **encouraged**, notably by identifying the major sources of negative environmental impacts and **avoiding transfer of pollution**, when this improvement does **not entail excessive costs**.*

*The eco-design of products is a crucial factor in the Community strategy on Integrated Product Policy. For it focuses on products while maintaining their functional qualities, this **preventive approach** provides genuine new opportunities for manufacturers, consumers and society as a whole.*

*In order to maximize the benefits brought from an improved design, it may be necessary to **inform consumers** about the environmental characteristics and performance of energy-related products and to advise them on how to use these products in an environmentally friendly manner.*

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<sup>13</sup> Extracts of Directive 2009/125/EC of October 21<sup>st</sup>, 2009 establishing a framework for the setting up of requirements related to eco-design applicable to energy-related products.

### 3.2.2 Definitions of stakeholders

Eco-design is a corporate approach<sup>14</sup> which consists in integrating the environment from the design phase of the product onwards. As such, its objective is to reduce negative environmental impacts of the product throughout its life cycle (extraction of raw materials, production, distribution, use and end-of-life cycle) while maintaining its functional qualities (same performance and/or same efficiency).

Eco-design is intended for a product as well as a service and is a process which integrates both regulatory (principle of conformity) and responsibility aspects.

This initiative is product-related and applies at the first step of design as well as the renovation or reformulation step of any product. It is based on an overall multi-step approach: this thinking process on the entire life cycle helps optimize each of the steps thereby avoiding transfer of pollution or transfer of impact from one step to another.

The eco-design of any packaged product (and not only packaging) is an approach taking into consideration the entire life cycle of the product and its packaging for packaging does not exist on its own but depends on the product using it for storage, transportation, etc. and thereby limits waste and loss of products<sup>15</sup>.

### 3.3 Definitions and roles of packaging

The word "packaging"<sup>16</sup> refers to every product made of any materials of any nature to be used for the containment, protection, handling, delivery and presentation of goods from the producer to the consumer. Every "disposable" item used for the same purposes must be considered as packaging.

Packaging<sup>17</sup> only refers to:

**1° Primary or sales packaging (I)** is packaging conceived so as to constitute a sales unit to the final user or consumer at the point of sale.

**2° Secondary or grouped packaging (II)** is packaging conceived so as to constitute at the point of sale, a set of several sales units, whether the latter is sold as such to the final user or consumer, or whether it only serves as a means to replenish the shelves at the point of sale. It can be removed from the product it covers or protects without affecting its characteristics.

**3° Tertiary or transport packaging (III)** is packaging conceived so as to facilitate the handling and transportation of several sales units or grouped packaging in order to prevent physical handling and transport damage. Transport packaging does not include road, rail, fluvial, maritime or air containers.

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<sup>14</sup> Source ADEME

<sup>15</sup> *Prevention of waste and losses: the crucial role of packaging* ("La prévention du gaspillage et des pertes : le rôle clé de l'emballage") CNE 2011.

<sup>16</sup> The Environmental Code (Book V, Title IV, Chapter III, Section 5, Article R543-43)

<sup>17</sup> Directive No. 94/62/EC on packaging and packaging waste

Other definitions are necessary to fully understand this document:

- **Constituent:** the constituent of packaging is an element which cannot be easily separated from the rest of packaging, such as glues, inks and sealing wax.
- **Component:** the component of packaging is an element which can easily be separated from the rest of packaging, by hand or simple physical operations (see Standard EN 13427).
- **Overall packaging system:** it is made up of primary, secondary and tertiary packaging, including upstream packaging (used for transport, protection and packaging of raw materials/ packaging to develop and condition the product).
- **Functional unit:** it is the reporting unit in the Life Cycle Assessment (LCA). It is used to indicate the impacts on a representative and adequately characterized element such as the product and its packaging, or the product or packaging alone.
- **Recovery:** any operation by which substances, materials or products which have become waste are used again.
- **Reuse:** any operation by which substances, materials or products that are not waste are used again for the same purpose for which they were conceived in the first place.

Below, you will find the presentation of the **packaging functionalities** for the product and its packaging (non-exhaustive list):

- **Preserving and protecting the product**  
It must protect:
  - The contents from the environment (limiting potential leaks, solvent evaporation in order to protect the user's health and forbidding dangerous uses for children, etc.)
  - The contents from external constraints (limiting damage by mechanical impacts, reducing the effect on taste and odors, preserving from air or oxygen spoiling, protecting from germ, insects or undesirable products interference, preventing theft or consumption of the contents before purchase, increasing the life expectancy of perishable goods...).
- **Informing**
  - Giving general and legal information (use-by date, storage temperature, user's guide, posology/unit dose, composition, presence of allergens, price, quantity, weight, etc.)
  - Giving information on the conditions of production (Eco-label, "Label rouge" – a French national quality assurance scheme for food products managed by the Ministry of Agriculture, fair trade, AOC label, etc.)
  - Diffusing information related to the characteristics of the product in its market environment (brand, allegations about nutrition and/or health, recipes, cooking mode, product history...).
- **Grouping consumption units**
  - Grouping several consumption units together so as to get an adequacy between the products consumption and the frequency of purchase (yogurts or beer packs)
  - Gathering products in units that are easy to manipulate (packs of biscuits) in order to ensure different types of consumption (nomadic lifestyle...)
  - Promoting products (promotional kit)
  - Facilitating handling and transport for the consumer
  - Making shelves stocking easier as well as any other handling action for operators.

- **Transporting and storing**

- Delivering the goods from the production site to the sales area without any damage (preservation of the product and its packaging from mechanical accidents) by wood pallets, corrugated board protections, corner protections, metallic and plastic strings, stretch and shrink-wrapping, etc.
- Protecting against any malevolent act (theft or "bioterrorism")
- Notifying logistics centers of the contents of transport crates (logo, brand, contents, bar-code etc.)
- Enabling stowage for the consumer
- Providing the products transportability to the consumer's home.

- **Facilitating the use of the product**

The use of the product and its packaging go hand in hand, since they are often inseparable:

- Easy opening of the packaging for groups of consumers (seniors, children, nomadic adolescents, athletes, etc.)
- A closing mechanism to enable a deferred consumption of the product
- Multi-portions for a split consumption or a nomadic use
- A comfortable handling of the product to ensure optimal matching between weight, size, form and frequency of use
- Exact doses to limit losses
- Restitution of the product: emptying as much as possible the contents out of the packaging
- Using the product and its-packaging for any kind of preservation (freezing) or of preparation (oven, microwave, double boiler, etc.)

- **Facilitating the packaging of the product**

- Fulfilling automated systems without inadvertent shutdown
- Guarantying the safety of the employees who are responsible for packaging
- Carrying out packaging operations at reasonable costs
- Resistance to all packaging operations (impacts, heat, output, vibrations, closing, hygiene, canning...)

- **Making the product visible and spreading the values of the product and/or of the brand of the company**

- Encouraging the act of purchase through packaging, which constitutes a beacon among the shelves (the consumer only stays a few seconds in the aisle) thanks to a color code (green for bifidus yogurt, red for cola beverages...), the shape of the packaged product (orange-shaped bottle for orange juice), the material used and the context to be referred to (wood for tradition), graphic design and typography for immediate product recognition
- Spreading the benefits and values of the brand and the company (corporate social responsibility)
- Guarantying acceptability for the consumer during the purchasing and consumption phases of a product<sup>18</sup>.

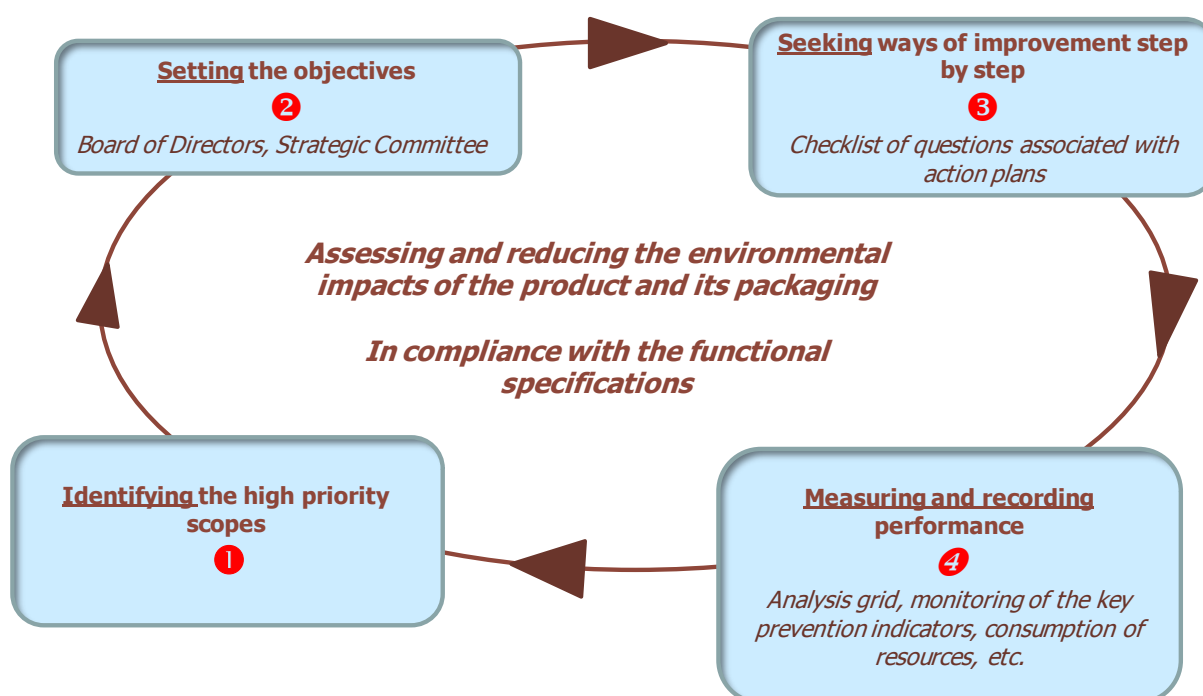
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<sup>18</sup> *Acceptability of packaging for the product, the consumer and the user ("L'acceptabilité de l'emballage, pour le produit, pour le consommateur et pour l'utilisateur")*, CNE, October 2010.

## 4. Methodological guide

### 4.1 Principle of continuous improvement and stakeholder commitment

The eco-design of packaging fits into the multi-criteria analysis of the entire life cycle of the product and packaging. The company can assess the environmental impacts of the product and its packaging and start implementing action plans according to the following continuous improvement circle. This iterative process applies to the makeover of packaged products as well as part of an innovation approach.



### 4.2 Basic rules

An efficient and successful eco-design approach requires:

- The company's commitment (leaders and employees): a project-based approach, a dialogue as well as joint efforts should be established between the company's different departments (Marketing, Purchasing, R&D, Engineering, etc.)
- The collaboration of all the stakeholders, in particular the suppliers (designers, creative agencies, machine or packaging manufacturers), the actors of the supply chain, the clients (distributors, consumers and users), etc.
- The setting of meaningful objectives aiming at reducing the environmental footprint, attainable by the company and its employees.

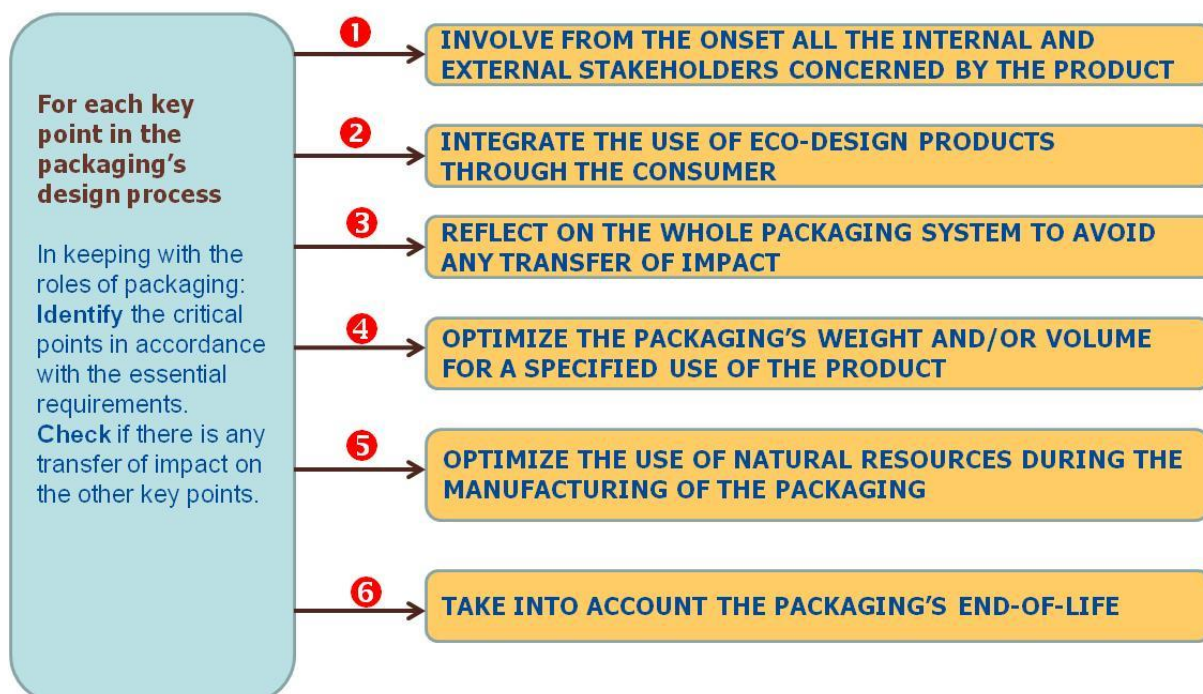
As regards the packaged product, the CNE's basic rules used for this guide are based on:

- The compliance with the current rules/legislation and standards
- The product and its packaging
- The assessment of the whole packaging system
- The multi-step and multi-criteria approach taking into account the entire life cycle
- The reflection on how to improve an existing product without changing its material
- For a given material, determining at which point it becomes impossible to reduce its weight or its volume (critical point)

### 4.3 Analysis of the packaged product's life cycle

The French Packaging Council's methodology aims at asking the right questions for each key point and keeping the solutions designed to reduce the product's environmental footprint without establishing a quantitative report as comprehensive as the one given by the Life Cycle Assessment.

The following diagram summarizes the six key points that should be taken into account.



## 4.4 Checklist

This questionnaire deals with the six key points in the design and manufacture of the packaged product throughout the value chain.

The objective of this checklist in 25 questions is to help companies comprehend in a simple and pragmatic way the requirements related to the environment in the design, manufacture, packaging, distribution and use of a packaged product.

It constitutes a self-evaluation guide: for each question, the company will answer according to its field of activity by YES or NO if it is concerned (or by N/A if non applicable).

The company will then be able to set up an action plan for each YES.

Each NO requires objective grounds or a reason related to the reaching of a critical point.

If need be, the company can use the "References" column to seek more information on the subject.

The "Comments" column includes notes from CNE partners.



<b>KEY POINT 1 INVOLVE FROM THE ONSET ALL STAKEHOLDERS (internal and external) CONCERNED BY THE PRODUCT</b>	<b>QUESTION N°</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>REFERENCES</b>	<b>COMMENTS</b>
Is it possible to extend the product's duration of use?	<b>1</b>					
Can we change the product's formula or dosage form to optimize the packaging? Would modifying the product enable us to reduce, simplify or remove an element of the packaging?	<b>2</b>					
Is the chosen packaging suitable to the mode of consumption considered? (e.g. intermittent consumption = mono-dose packaging)	<b>3</b>				See the CNE <sup>19</sup> document	
Is it possible to design a refillable primary packaging to increase the packaging's life span?	<b>4</b>					Consider the couple: packaging and the refill (reusable pump)

<sup>19</sup> *Prevention of waste and losses: the crucial role of packaging* ( *La prévention du gaspillage et des pertes : le rôle clé de l'emballage* ) CNE 2011.

KEY POINT 2 INTEGRATE THE USE OF ECO-DESIGN PRODUCTS THROUGH THE CONSUMER	QUESTION N°	YES	NO	N/A	REFERENCES	COMMENTS
<p>Can the ratio of use of the couple product / packaging be optimized?</p> <ul style="list-style-type: none"> <li>- <b>Product:</b> Can we improve the product's rheological behavior (surface tension, viscosity, etc.)?</li> <li>- <b>Packaging:</b> Can we extract the maximum quantity of product thanks to an appropriate design and a suitable material enabling the consumer to use the whole product?</li> </ul>	<b>5</b>				See definition <sup>20</sup>	
Is the packaging's closing system proposed for intermittent-consumption products efficient and optimized for their preservation?	<b>6</b>				See the CNE <sup>21</sup> document	
Does the packaging contain clear instructions for an optimal use of the product and its packaging?	<b>7</b>					
Is it possible to reduce or to eliminate the waste generated by the closing and tamper-proof systems after use?	<b>8</b>					

<sup>20</sup> <sup>21</sup> *Prevention of waste and losses: the crucial role of packaging ("La prévention du gaspillage et des pertes : le rôle clé de l'emballage") CNE 2011.*

<b>KEY POINT 3</b> <b>REFLECT ON THE WHOLE PACKAGING SYSTEM TO AVOID ANY TRANSFER OF IMPACT</b>	<b>QUESTION N°</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>REFERENCES</b>	<b>COMMENTS</b>
Has the whole system been improved after the modification or optimization of an element of the packaging (without any transfer of impact)?	<b>9</b>					

<b>KEY POINT 4 OPTIMIZE THE PACKAGING'S WEIGHT AND/OR VOLUME FOR A SPECIFIED USE OF THE PRODUCT</b>	<b>QUESTION N°</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>REFERENCES</b>	<b>COMMENTS</b>
Is it possible to cut down the product's volume in order to reduce the quantity of packaging without altering its use?	<b>10</b>					(by concentration, densification, etc.)
<p>Can we optimize the packaging for a same global service? namely</p> <ul style="list-style-type: none"> <li>- Can we give a component various functions, and by doing so, reduce the number of components of different materials in the packaging?</li> <li>- Has the quantity/surface/volume of packaging materials used been optimized?</li> <li>- Has the volume of the packaging been optimized?</li> <li>- Has the utilization of the surfaces (short flaps, interlocking, etc.) been optimized?</li> <li>- Have the packaging's dimensions been optimized?</li> </ul>	<b>11</b>				NE 13428 See definition of the prevention indicators <sup>22</sup>	Example of the Shelf Ready Packaging (SRP) <sup>23</sup>
<p>Does the evolution of the packaging techniques allow a reduction of the packaging's volume and/or weight by:</p> <ul style="list-style-type: none"> <li>- Reduction of the volume of air in the packaging?</li> <li>- Vacuum packing?</li> <li>- Forming the packaging once filled?</li> <li>- Cutting down the volume by compaction or vibration?</li> <li>- Reducing the heat-seals' width?</li> <li>- Another method?</li> </ul>	<b>12</b>					
Is it possible to optimize the palettisation in order to increase the number of products transported?	<b>13</b>				See definition of the indicator <sup>24</sup>	
Have the tier-1 and tier-2 suppliers' flows (of materials, transports) been optimized?	<b>14</b>					According to the project's accessibility (volume of products, investments, life cycle of the product on the market, storage volume in factories)

<sup>22 24</sup> Key prevention indicators

<sup>23</sup> Assessing tool <http://www.ecr-france.org/boite-a-outils/epavo>

<b>KEY POINT 5 OPTIMIZE THE USE OF NATURAL RESOURCES DURING THE MANUFACTURING OF PACKAGING</b>	<b>QUESTION N°</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>REFERENCES</b>	<b>COMMENTS</b>
Have the latest technological innovations related to packaging materials and their transformation (new materials, new mode of transformation, etc.) been taken into account?	<b>15</b>					
For a given material, has the optimum transformation technology (best practices available) been selected to reduce the impacts on the environment during the manufacturing process?	<b>16</b>					
Have the options/technical constraints of the supplier's machines, of the packaging products and of their transformation (dimension of the cardboard sheets, width of the machine, minimum/maximum thickness of the materials, etc.) been taken into account?	<b>17</b>					To reduce the production waste (cutting surplus, ...)
Is it possible to increase the number of packaging produced at each cycle by optimizing the quantities in the series of production or by optimizing the size of the tools (mold) for instance?	<b>18</b>					To be put into perspective with the market, the demand for versatility and the flexibility given by small series
Has the ink rate been optimized for the most suitable printing technology?	<b>19</b>					
Is it possible to reuse the packing used for the packaging by the packaging materials manufacturer or by the packing manufacturer (materials used for transportation) in financial and especially environmental conditions equal or superior to their recycling?	<b>20</b>					

<b>KEY POINT 6 TAKE INTO ACCOUNT THE PACKAGING'S END OF LIFE</b>	<b>QUESTION N°</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>REFERENCES</b>	<b>COMMENTS</b>
Does the consumer has access to enough information (environmental information, waste sorting, explanation of the logos, etc.) to improve the end of life of the packaging he/she holds?	<b>21</b>				Ademe Guide  Infotri Eco-Emballages Guide	
Is the reduction of the bulk volume of the post-use packaging easy or facilitated for the consumer in order to optimize the sorting and collecting?	<b>22</b>					
Do used packaging have an existing collecting and industrial recycling system?	<b>23</b>				NE 13430 CEREC <sup>25</sup> COTREP <sup>26</sup>	The opinion is optional
If an industrial recycling is not possible, can used packaging be recycled in energy recovery or made into compost?	<b>24</b>				NE 13431 NE 13432	provided that waste collecting, sorting and valorization systems exist for this type of packaging
Can some types of packaging or elements of the packaging of the whole system been reused in financial and especially environmental conditions equal or superior to their recycling?	<b>25</b>					

<sup>25</sup> <http://www.cerec-emballages.fr>

<sup>26</sup> <http://www.cotrep.fr>

## 5. Tools

### Criteria for selecting a relevant tool

The packaging's compliance to the current regulation is a prerequisite regardless of the nature of the tool used and the objectives pursued by the company in the framework of its global strategy.

Current regulations should not only be understood as the regulations mentioned in this frame of reference for eco-design but also as every regulation establishing the neutrality of the packaging towards its contents.

The selection of a relevant helping tool remains the company's decision; the CNE would like to mention a few criteria that would enable to strengthen the results. Indeed, the CNE considers that following criteria cannot be ignored:

- ✓ Compliance to the current regulations/legislation
- ✓ Based on the product/packaging pairing
- ✓ Assessment of the whole packaging system
- ✓ A multi-step and multi-criteria approach to the analysis of the entire life cycle of the product

## Acknowledgements

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Duret Sylvaine	Posson Packaging
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Duclaux Charles	L'oréal
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Fandard Aurore	Bic
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Garnier Bruno	Carrefour
Hervé Marcel	LNE
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Klein Catherine	Valorplast
Le Moux Jan	Eco-Emballages
Loubry Michel	PlasticsEurope
Lucot Daniel	Yoplait
Marciniak Pascale	Chanel
Marchand Christian	Total
Martin Sylvain	Avocat
NYS Florence	Club Bio-Plastiques
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Peltier Fabrice	P'référence
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Pinoteaux Thibault	Groupe Casino
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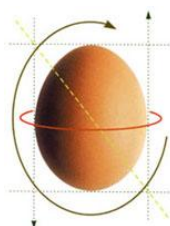
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