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Background document III:

Assessing requirements for non-energy related products and means of transport

Evaluation of the Energy Labelling Directive and specific aspects of the Ecodesign Directive

ENER/C3/2012-523

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Evaluation of the Energy Labelling Directive

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ENER/C3/2012-523

- Confidential –

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1 Introduction

One of the key priorities in the evaluation of the Energy Labelling and Ecodesign Directives regards the scope of these directives. This report sets out to analyse the possibility to extend the scope of both directives to non-energy related products, product systems and means of transport.

While the working plan for 2012-2014 did not include non-energy related products, it did mention power generating equipment under 50MW as being one target to investigate the opportunity for establishing Ecodesign and energy labelling requirements, since the savings potential may be substantial. It has, therefore, been included in Lot 1 of the upcoming preparatory studies for implementing measures under the Ecodesign Directive, and is not addressed in this report.

The analysis is built on existing studies such as the 2011 CSES evaluation study of the Ecodesign Directive (CSES 2012). The findings of this task do not replace future steps in the Ecodesign and energy labelling regulatory process such as the preparation of the next Working Plan, or Ecodesign Preparatory Studies. Instead, it assesses the feasibility of including the above mentioned products in the scope of the Energy Labelling or the Ecodesign Directives.

To assess which product groups are appropriate and feasible for energy labelling and Ecodesign requirements, the following criteria will be taken into consideration:

- Sales and trade volumes;
- Key environmental impacts and improvement potentials;
- Appropriateness of Ecodesign in realising these potentials considering aspects such as:
- Necessity for regulation (market failure);
- Possibility to regulate the aspect on a product level;
- Possibility to address the impact successfully at a design stage;
- Coverage by existing legislation;
- Feasibility, e.g. with respect to conformity assessment, administrative burden and cost.

2 Methodology[1]

To access the appropriateness and feasibility of extending the product scope above the following methodology is followed:

1. Reduce the Prodcom list;
2. Aggregate the remaining product groups to form higher-level categories;
3. Refine / modify the list using other categorizations such as COICOP, or categorizations used in other studies (EIPRO, 2006, CSES, 2012);
4. For the resulting categories, develop a scoring system based on:
    a. an assessment of market size (especially if expressed in other terms than unit sales);
    b. a first rough (and, if necessary, qualitative) assessment of environmental impact and improvement potential, based on literature (EIPRO 2006, IMPRO, UNEP 2010, TNO 2011);
    c. a first rough assessment of suitability for Ecodesign and Labelling legislation (as opposed to alternative instruments or voluntary initiatives);
    d. a first rough assessment of the feasibility of Ecodesign and Labelling legislation (data availability, methodological and verification issues)
    e. a first rough assessment of the possible costs / risks and benefits of Ecodesign and Labelling legislation (bureaucratic / cost burden, risks to the existing process, consumer benefit / acceptance);
5. Based on the scoring system, develop a first tentative ranking;
6. Choose 5 case studies based on the criteria:
    a. coverage of different categories of products / systems / means of transport;
    b. rank high within their category;
    c. sufficiently different from those covered by the CSES study;
7. Conduct case studies;
8. Research additional information and data (on environmental impact and improvement potential, feasibility, appropriateness, stakeholder views etc.) for the top product groups in each category, all in all 20 product groups;
9. Refine ranking based on the insights from the case studies (as far as they can be extended to similar products from the same category) and the additional information and data;
10. Make recommendations on potential scope expansion based on the ranking and the product categories to be covered, and on the analysis of any theoretical or practical limitations to the possible scope expansions.

[1] Identical to the text in the First Findings and Recommendations report

3 Selection of Product Groups

In this first step, a preliminary list of non ErP groups and systems (see Box 1 for the definition of system) and means of transport, excluding those product groups dealt with in the Study on Amended Ecodesign Working Plan under the Ecodesign Directive[2], is compiled. The identification of product groups will initially be based on the product categories described in the Prodcom database (see Box 2).

Box 1 Definition of Product system

In a Life Cycle Assessment (LCA) there is a need to consider, not only the product it-self, but all the stages of a product's life from-cradle-to-grave (i.e., from raw material extraction through materials processing, manufacture, distribution, use, repair and maintenance, and disposal or recycling).

The definition of product system according to the ISO 14044 standard, which specifies requirements and provides guidelines for LCA, is:" collection of unit processes with elementary and product flows, performing one or more defined functions, and which models the life cycle of a product." In practice the product system consists of all included processes in the life cycle.

The goal and scope definition of an LCA provides a description of the product system in terms of the system boundaries and a functional unit (what the product does). The functional unit is a measure of the function of the studied system and it provides a reference to which the inputs and outputs can be related. The system boundary determines which unit process shall be included within the LCA. The selection of the system boundary shall be consistent with the goal of the study.

The product system can be desegregated into unit processes. Flows of intermediate products connected these unit processes together. In addition each unit can have inputs or extractions from the environmental (consumption of resources, energy,…) and outputs or emissions to the environmental(to water, air, soil…) also called elementary flows.

The clear definition of the product system and its boundaries facilitates the collection of data and the quantification of inputs (use of resources, raw materials, electricity, etc.) ant outputs (Emissions to air, water and land, waste, etc.) (Rebitze et al., 2004; Joillet, O.,Norris, G., 2003).

[2] http://www.ecodesign-wp2.eu/

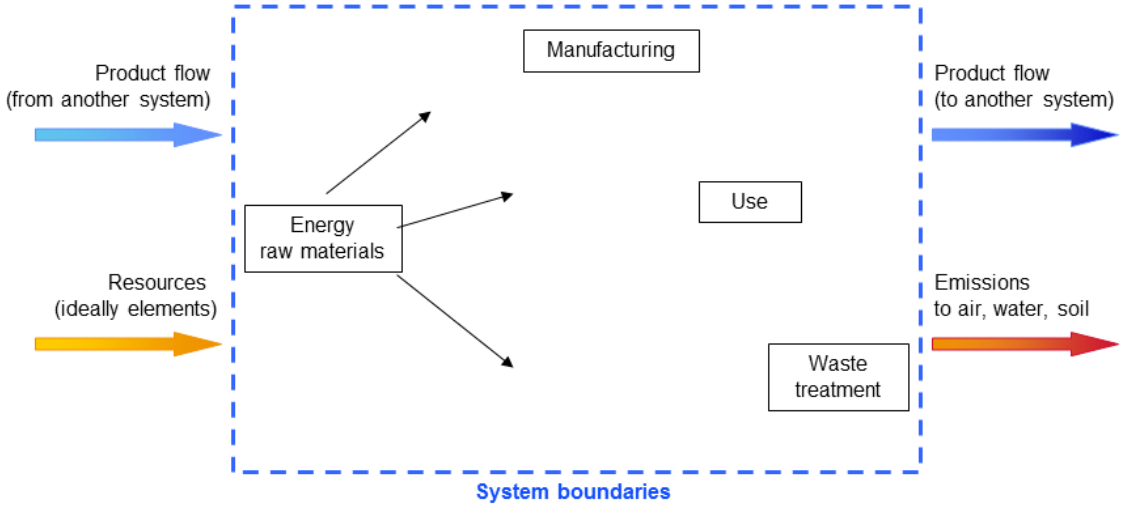

Figure 1 **Inputs and outputs of a product system (Joillet, O., Norris, G., 2003)**

Box 2 **Description of the Prodcom database**

The Prodcom list is essentially a database of 'economic activities' structured according to product categories. The database presents per product category data on production - and for some product groups also import and export - expressed in value (euros) or quantities (kg or units), for each Member State, over multiple years and allows the EU to keep track of its economic activities inside the EU and across its borders.

The economic activities may cover the placing of products on the market, but may also refer to activities (such as service and maintenance) that fall outside the scope of the Directive and this study.

At its highest level of detail (group numbering using 8 digits) Prodcom 2013 uses 3900 product categories, with descriptions ranging from basic ores, to complex products like nuclear reactors and services like repair and maintenance of products. Obviously, not all of these 3900 product categories fit the scope of the ED and EL Directives. This section explains how the products that fall outside the scope have been identified and exempted from further analysis.

3.1 Reducing the Prodcom list

In a first step a list of non-energy related product groups was created. For that, the overall list of economic activities in the European Community, the Prodcom 2011 list, was reduced from 3900 product categories to 2872 categories by excluding the energy-related products. The remaining list of product categories was further reduced to 1215 categories by applying previously defined 'exclusion - rules' (

Table 1).

The following groups were excluded:

- Energy related products
- Services (e.g. installation, repair and maintenace)
- product groups that are intrinsically not suitable for this type of legislation, such as raw materials or 'intermediate/semi-finished' products (e.g. because there are no design-related improvement options, they are not sold to the final customer, or the variation in environmental impact is very low)
- products clearly falling into the domain of some other legislation, such as chemicals, which are covered by REACH
- product groups that clearly do not fulfil one of the criteria "number of sales", "environmental impact" or "potential for improvement"

Figure 2 ilustrates the approach followed.

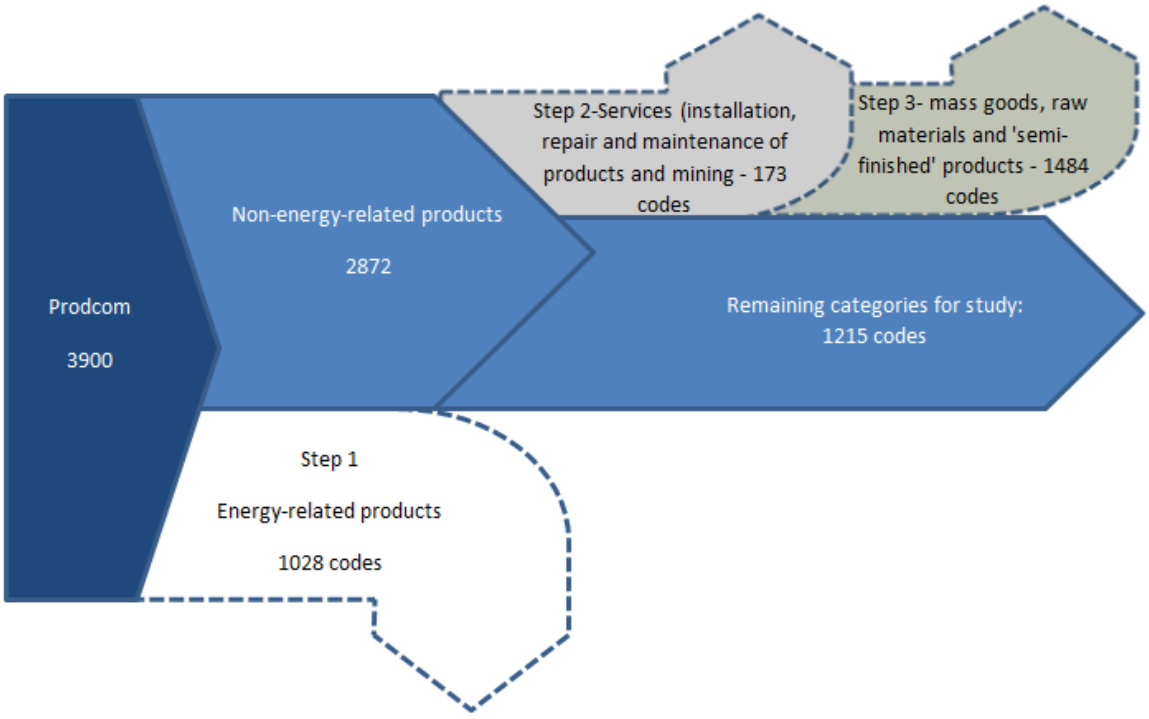

Figure 2. Selection of non-energy-related products

Table 1 Reduced list of Prodcom codes

Prodcom CPA heading	n. of codes
Processing and preserving of meat	28
Processing and preserving of poultry meat	18
Production of meat and poultry meat products	19
Processing and preserving of fish, crustaceans and molluscs	30
Processing and preserving of potatoes	6
Manufacture of fruit and vegetable juice	12
Other processing and preserving of fruit and vegetables	30
Manufacture of oils and fats	33
Manufacture of margarine and similar edible fats	2
Operation of dairies and cheese making	29
Manufacture of ice cream	1
Manufacture of grain mill products	21
Manufacture of starches and starch products	15
Manufacture of bread; manufacture of fresh pastry goods and cakes	2
Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	12
Manufacture of macaroni, noodles, couscous and similar farinaceous products	3
Manufacture of sugar	7
Manufacture of cocoa, chocolate and sugar confectionery	31
Processing of tea and coffee	8
Manufacture of condiments and seasonings	8
Manufacture of prepared meals and dishes	6
Manufacture of homogenised food preparations and dietetic food	5
Manufacture of other food products n.e.c.	13
Manufacture of prepared feeds for farm animals	5
Manufacture of prepared pet foods	2
Distilling, rectifying and blending of spirits	8
Manufacture of wine from grape	10
Manufacture of cider and other fruit wines	1
Manufacture of other non-distilled fermented beverages	1
Manufacture of beer	2
Manufacture of soft drinks; production of mineral waters and other bottled waters	5
Manufacture of tobacco products	5
Manufacture of made-up textile articles, except apparel	33
Manufacture of carpets and rugs	5
Manufacture of cordage, rope, twine and netting	12
Manufacture of workwear	10
Manufacture of other outerwear	41

Prodcom CPA heading	n. of codes
Manufacture of underwear	23
Manufacture of other wearing apparel and accessories	33
Manufacture of articles of fur	2
Manufacture of knitted and crocheted hosiery	5
Manufacture of other knitted and crocheted apparel	10
Manufacture of luggage, handbags and the like, saddlery and harness	9
Manufacture of footwear	24
Manufacture of assembled parquet floors	2
Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting	16
Manufacture of paper and paperboard	54
Manufacture of corrugated paper and paperboard and of containers of paper and paperboard	7
Manufacture of household and sanitary goods and of toilet requisites	11
Manufacture of paper stationery	15
Manufacture of wallpaper	1
Manufacture of other articles of paper and paperboard	11
Printing of newspapers	1
Other printing	17
Manufacture of pesticides and other agrochemical products	25
Manufacture of paints, varnishes and similar coatings, printing ink and mastics	17
Manufacture of soap and detergents, cleaning and polishing preparations	21
Manufacture of perfumes and toilet preparations	19
Manufacture of glues	4
Manufacture of builders' ware of plastic	10
Manufacture of hollow glass	18
Manufacture of ceramic tiles and flags	7
Manufacture of ceramic household and ornamental articles	8
Manufacture of ceramic sanitary fixtures	2
Manufacture of other ceramic products	4
Manufacture of cement	3
Manufacture of lime and plaster	6
Manufacture of cutlery	14
Manufacture of locks and hinges	16
Manufacture of tools	79
Manufacture of agricultural and forestry machinery	11
Manufacture of motor vehicles	21
Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	11

Prodcom CPA heading	n. of codes
Building of ships and floating structures	22
Building of pleasure and sporting boats	4
Manufacture of railway locomotives and rolling stock	9
Manufacture of air and spacecraft and related machinery	19
Manufacture of motorcycles	7
Manufacture of bicycles and invalid carriages	10
Manufacture of other transport equipment n.e.c.	1
Manufacture of office and shop furniture	5
Manufacture of kitchen furniture	1
Manufacture of mattresses	4
Manufacture of other furniture	6
Manufacture of jewellery and related articles	7
Manufacture of imitation jewellery and related articles	11
Manufacture of sports goods	12
Manufacture of games and toys	6
Manufacture of medical and dental instruments and supplies	24
Manufacture of brooms and brushes	10
Other manufacturing n.e.c.	41

The Prodcom database and the resulting list of products have some limitations, which necessitates an aggregation of the resulting list of products. For example, the sector-orientation of the Prodcom database, and its inability to fit in with functional product descriptions can pose difficulties to this assessment. Moreover, despite the rather detailed description provided it is not always possible to distinguish between products directed towards consumer use and those that have an industrial application (e.g. cleaners of surfaces, adhesives).

Therefore, the remaining product groups are aggregated to form higher-level categories. This aggregation is based on primary product functions. The Prodcom product group descriptions that have been identified were compared to COICOP category descriptions to find the closest match. This was the basis for aggregating the remaining product groups to form higher-level categories.

3.2 First ranking of product groups

The elaboration of the rank combined an analysis of market, existing life cycle environmental impact and improvement potential studies, availability of information, and Suitability for Ecodesign (ED) and Labelling legislation (ELD). The ranking was made based on a basic scoring system (0, 1 or 2) as follows:

Economic and Market Analysis - The Eurostat PRODCOM database was used as a starting point for sales and trade level data. The data provided for the great majority of the products are in units sold, weight (kg) or volume (litres or m3). So for this parameter:

- Weight
  - Above $1.0x10^7$ kg: 2 points
  - $4.0x10^5$ - $1.0x10^7$:1 point
  - Below $4.0x10^5$: 0 points
- Volume:
  - Above $1.0x10^8$:2 points
  - $1.0x10^6$-$1.0x10^8$:1 point
  - Below $1.0x10^6$: 0 points
- Units
  - Above $2.0x10^6$:2 points
  - $4.0x10^5$-$2.0x10^6$: 1 point
  - Below $4.0x10^5$: 0 points

Main environmental impact – The EIPRO study is the most exhaustive in terms of its presentation of environmental impacts for almost all product families, and hence was used as the main data source to determine product categories with the highest environmental impacts. The rule used in this step was to score the different environmental impacts categories and then sum these points to obtain the final score. So for:

- Global Warming Potential
  - 5%-12%: 2 points
  - 0.2%-5%:1 point
  - Below 0,2%:0 points
- Photochemical oxidation
  - 1%-10%:2 points
  - 0,3%-1%:1 point
  - Below 0,3: 0 points
- Eutrophication
  - 10%-23%: 2 points
  - 0.7%-10%: 1 point
  - Below 0.7%:0 points
- Acidification
  - 5%-14%: 2 points
  - 1%-5%: 1 point
  - Below 1%: 0 points

Then, if the total of points is:

- Between 5-8: 2 points;
- Between 2-4:1 point;
- Below 2: 0 points.

LCA relevant information available - Life-cycle assessment (LCA), is a technique to assess environmental impacts associated with all the stages of a product's life. The main environmental impacts of the products covered and in some cases, the improvement potential were identified by supporting studies (EIPRO 2006; IMPRO 2008; UNEP 2010; TNO 2011) and eco-labels (European Eco-label, the Nordic Eco-label (Nordic Swan), the German Blaue Engel and the Dutch Milieukeur) and specially by the work conducted by the Joint Research Centre in the context of the Sustainable Production and Consumption project (IPTS)[3]. So, for those products that:

- have information about their LCA in studies like IPTS, EIPRO, eco-label and POBRAS or other studies available 2 points are given;
- only have eco-label information or only EIPRO information 1 point is given;
- no information available 0 points are given.

Suitability for Ecodesign (ED) and Labelling legislation (ELD) - ED and ELD share objectives, but use a different policy mechanism. ED pushes the market, while ELD provides for a market pull. In addition, ED concerns all life cycle phases and multiple environmental impacts, while ELD requirements only concern energy consumption during the use phase. Clearly there are many overlapping objectives between ED/ELD and other EU Policies (Energy Efficiency Directive, Energy Performance of Buildings Directive, Tyre Labelling, Ecolabel, Energy Star, the F-gas regulation, the Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), Restriction of Hazardous Substances Directive (RoHS), Waste Electrical and Electronic Equipment Directive (WEEE), and General Product Safety Directive (GPSD)).
When specific information is not available, the presence of an Eco-label or Organic label can be considered as one indication that there is potential for improvement for the specific product category. Eco-labelled products perform, in principle, much better than the average product in the market. Products that are covered by Eco-labels are, in general, better candidates for the development of generic or specific eco-design requirements since some of the requirements, even though not always product specific, have already been developed and tested in practice. Therefore these products will be awarded 2 points.
In particular protection goals may conflict between ED and ELD on the one hand and other environmental legislation (CO_2 Directive, RoHS, and F-gas regulation) on the other, a situation that calls for specific attention when setting minimum standards or label requirements. This is the case of energy saving lamps using mercury. Compared to conventional lighting these have a reduced energy consumption but a higher mercury content. This type of conflict does not necessarily mean that these products are not suitable for Ecodesign. However, it means that some of the relevant aspects are already being dealt with, and that the space for Ecodesign is reduced. Therefore, this type of products will receive 0 point.
To sum up: For those products that already have:

- labels (European Eco-label, the Nordic Eco-label (Nordic Swan), the German Blaue Engel, Dutch Milieukeur, EU Organic Label) are attributed 2 point;

[3] IPTS, Environmental improvement of products, http://susproc.jrc.ec.europa.eu/activities/IPP/impro.html

- some of the relevant aspects are already being dealt with by other legislation, 0 points are attributed
- none of the above 1 points are attributed.

For the **assessment of the possible costs/risks and benefits of Ecodesign and Labelling legislation** (bureaucratic/cost burden, risks to the existing process, consumer benefit / acceptance), the following questions and considerations specifying possible costs / risks or benefits function as a scoring guide:

a) Bureaucratic / cost burden

for both Ecodesign and Label:

Any regulation adds cost for both regulators and regulated (manufacturers), so this aspect needs to be discussed on a general rather than product-specific level. However, there are also product-specific aspects:

- specific difficulties in conducting preparatory studies and setting up criteria?
- specific difficulties in market surveillance?
- high costs of improvement for manufacturers?
- Rapid technological development – would frequent relabeling or updating of minimum standards be necessary?

b) Risks to the existing process

for both Ecodesign and Label:

Any new regulation would compete with the existing process in terms of time and resources, as long as there are no extra resources assigned. The issue should therefore be discussed on a general rather than product-specific level.

c) Consumer benefit / acceptance

for both Ecodesign and label:

- Would improvement of the product create a monetary benefit?
- Would improvement of the product create a non-monetary benefit? (health, comfort, security…)
- If there is additional cost for the improved product: would the non-monetary benefit be likely to outweigh it?

For Ecodesign:

- Monetary benefit: Is the LCC approach feasible?
- What would be the added value of Ecodesign as compared to other, existing environmental policies, in ensuring consumer benefit?

For label:

- Would a label work?
- Does the product vary enough that a label could be helpful?
- Who is the consumer? (e.g. individual consumer vs. procurer)? What kind of guidance does he need – would a label be helpful?

- Would a label possibly be considered in the purchase process?
- What would be the added value of the label compared to existing information sources? (especially other labels)? (E.g. through its compulsory nature or staged approach)?

d) Societal benefit

For Ecodesign:

- What would be the added value of Ecodesign, as compared to other policies, in achieving environmental improvement?
- What would be the added value of Ecodesign, as compared to other policies, in stimulating innovation?

For label:

- What would be the added value of the label, as compared to other policies, in achieving environmental improvement?
- What would be the added value of the label, as compared to other policies, in stimulating innovation?

Depending on the applicability and answer to these questions, an overall score of 0 to 2 points was given based on their overall evaluation. When a product group was very heterogeneous technically, functionally or in terms of the market (such as "Materials for the maintenance and repair of the dwelling"), the score for the highest ranking subcategory was applied (in this case, 2 for Ecodesign (for paints and varnishes) and 1 for the label (for wallpaper)).

The detailed assessment of each of these aspects is shown in table 1 and a ranking of the product groups is made as shown in the table below

Table 2 Assessment of product groups

Product group/category (COICOP)	Prodcom categories	Relevant Prodcom codes	Sold Volume (Prodcom)	Main environmental impact areas(EIPRO)	LCA relevant information available	Cost / benefit assessment of Ecodesign	Cost / benefit assessment of Labelling
FOOD							
Meat	Processing and preserving of meat	10111140-10116090 (28 codes)	37400000 kg	Global Warming Potential (11,9%); photochemical oxidation(9,2%); eutrophication(22,5%); acidification(13.4%)	JRC – IPTS studies on environmental impact and improvement potential, PROBAS	Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost; LCC approach not applicable; other policies such as food law (for products) or EMAS (for production processes) might be more suitable; in part: different verification methods needed (audit). Sausages already covered by CSES	Little added value as compared to e.g. organic label (organic label is mandatory for packaged food)
	Processing and preserving of poultry meat	10121010-10125000 (18 codes)	13500000 kg				

	Production of meat and poultry meat products	10131120-10139100 (19 codes)	17500000 kg			Improvement would bring high non-monetary benefits to both consumers and society, but probably at higher cost; LCC approach not applicable; other policies such as agricultural policy or food law might be more suitable; verification issues.	
Fish and seafood	Processing and preserving of fish, crustaceans and molluscs	10201100-10204100 (29 codes)	4250000 kg	Global Warming Potential (0,7%); photochemical oxidation(0,4%); eutrophication(22,5%); acidification(0,5%)	EIPRO study on environmental impact, PROBAS (probably focusing on production)	Relatively little benefit for consumers and society in relation to cost; might be addressed by other policies such as food law (product related) or EMAS (production related)	Little added value; EU Organic label already mandatory for processed food; voluntary MSC label for fisheries (instead of mandatory label, general improvement of fishery policy would

	production of fish – either fishery or aqua-culture				PROBAS and others	Improvement would bring high non-monetary benefits mainly to society in case of fisheries and to both consumers and society in case of aquaculture, but probably at higher cost; LCC approach not applicable; other policies might be more suitable; important verification issues.	be preferable)
Fruit and Vegetables	Manufacture of fruit and vegetable juice	10321100-10321930 (12 codes)	10500000 l	Global Warming Potential (1,2%); photochemical oxidation(1,2%); eutrophication(1,5%); acidification(0,6%)	EIPRO study on environmental impact, PROBAS (probably focusing on agricultural production)	Improvement would bring important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for products) or EMAS (for production	Little added value as compared to EU Organic label

						processes) might be more suitable; in part: different verification methods needed (audit)	
	Other processing and preserving of fruit and vegetables	10391100-10399100 (30 codes)	23000000 kg				
	Processing and preserving of potatoes	10311110-10311460 (6 codes)	7050000 kg	Global Warming Potential (0,7%); photochemical oxidation(0,5%); eutrophication(N.A.%); acidification(0,5%)	EIPRO study on environmental impact, PROBAS (probably focusing on agricultural production)	Improvement would bring important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for products) or EMAS (for production processes) might be more suitable; in part: different verification methods needed (audit)	Little added value as compared to EU Organic label

Oils and fats	Manufacture of oils and fats	10411100-10417200 (33 codes)	53000000 kg	Global Warming Potential (1,3%); photochemical oxidation(1,2%); eutrophication(1,8%); acidification(1%)	EIPRO study on environmental impact, PROBAS: butter and edible oils (no margarine)	Improvement would bring important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for products) or EMAS (for production processes) might be more suitable; in part: different verification methods needed (audit)	Little added value as compared to EU Organic label
	Manufacture of margarine and similar edible fats	10421030 10421050 (2 codes)	3070000 kg				
Milk, cheese and eggs	Operation of dairies and cheese making	10511133-10515600 (29 codes)	82500000 kg	Global Warming Potential (5,6%); photochemical oxidation(4,8%); eutrophication(11,2%); acidification(6%)	JRC – IPTS studies on environmental impact and improvement potential for dairy products, PROBAS; various	Improvement would bring important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for	Little added value as compared to EU Organic label

					(probably focusing on agricultural production)	products) or EMAS (for production processes) might be more suitable; in part: different verification methods needed (audit)	
Bread and cereals	Manufacture of grain mill products	10521000-10614090 (21 codes)	60500000 kg	Global Warming Potential (1,4%); photochemical oxidation(1,8%); eutrophication(10%); acidification(1,6%)	EIPRO study on environmental impact, PROBAS: bread, rolls flour, oat flakes, pasta, pizza; Oeko has some studies on biscuits	Improvement would bring important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for products) or EMAS (for production processes) might be more suitable; in part: different verification methods needed (audit)	Little added value as compared to EU Organic label
	Manufacture of starches and starch products	10621111-10621200 (15 codes)	17000000 kg				
	Manufacture of bread; manufacture of fresh pastry goods and cakes	10711100 10711200(2 codes)	24300000 kg				
	Manufacture of rusks and biscuits; manufacture of preserved pastry goods and cakes	10721130-10721990 (12 codes)	7661921				
	Manufacture of macaroni, noodles, couscous and similar farinaceous products	10731130 10731150 10731200 (3 codes)	5000000 kg				
Sugar, jam, honey, chocolate and	Manufacture of ice cream	10521000 (1 code)	3050000 l	eutrophication(1%) with High	EIPRO study on	Improvement would bring	Little added value as compared to EU

confectionery	Manufacture of sugar	10811230 10811290 10811300 (3 codes)	16300000 kg	environmental impacts per Euro of consumption (EIPRO)	environmental impact	important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for products) or EMAS (for 0production processes) might be more suitable; in part: different verification methods needed (audit)	Organic label
Coffee, tea and cocoa	Manufacture of cocoa, chocolate and sugar confectionery	10821100-10822400 (31 codes)	9200000 kg	Global Warming Potential (0,7%); photochemical oxidation(0,7%); eutrophication(0,9%); acidification(0,5%)	EIPRO study on environmental impact, Oeko-Institut has some studies (focusing on agricultural production)	Improvement would bring important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for products) or EMAS (for production	Little added value as compared to EU Organic label
	Processing of tea and coffee	10831130-10831300 (7 codes)	2650000 kg				

						processes) might be more suitable; in part: different verification methods needed (audit)	
Food products n.e.c.	Manufacture of condiments and seasonings	10841210-10843000 (5 codes)	7570000 kg	N.A.	Oeko-Institut has a study on frozen food; unpublished.	Improvement would bring important non-monetary benefits to both consumers and society (environmental impact, health). However, other policies such as food law (for products) or EMAS (for production processes) might be more suitable; in part: different verification methods needed (audit)	Little added value as compared to EU Organic label
	Manufacture of prepared meals and dishes	10851100-10851900 (6 codes)	5700000 kg				
	Manufacture of homogenised food preparations and dietetic food	10861010-10861070 (5 codes)	1500000 kg				
	Manufacture of other food products n.e.c.	10891100-10891940 (13 codes)	810000 kg				
Pets and related products	Manufacture of prepared feeds for farm animals	10911010-10911039 (5 codes)	1300000 00 kg	N.A.	PROBAS has a lot on feed for farm animals; Oeko is	Feed for farm animals is a subordinate aspect to meat production;	There might be limited value in a mandatory organic label for pet food (as this product
	Manufacture of prepared pet foods	10921030 10921060 (2	1020000 0 kg				

		codes)			conducting a study on cat food	therefore no additional value. Pet food: bad cost-benefit relation because data would be difficult to get; overlap with meat and other food products	group addresses individual consumers). Feed for farm animals is covered by organic food policies.
Tobacco							
Tobacco	Manufacture of tobacco products	12001130 12001150 (2 codes)	6850000 00 units	Global Warming Potential (0,7%); photochemical oxidation(0,8%) ; acidification(0,6 %)	EIPRO study on environment al impact	Improvement would bring important non-monetary benefits mainly to society (environ-mental impact). However, other policies might be more suitable; in part: different verification methods needed (audit)	Already heavily regulated; it should not be suggested there is a "good" alternative
Beverages							
Spirits	Distilling, rectifying and blending of spirits	11011020-11011080 (8 codes)	1820000 l alc 100%	N.A.	No study identified	Improvement would bring important non-monetary benefits	Little added value as compared to EU Organic label

						mainly to society (environ-mental impact). However, other policies might be more suitable; in part: different verification methods needed (audit)	
Wine	Manufacture of wine from grape	11021130-11021230 (9 codes)	6300000 l	Global Warming Potential (0,6%); photochemical oxidation(0,6%); eutrophication(0,5%); acidification(0,5%)	EIPRO study on environmental impact, various	Improvement would bring important non-monetary benefits mainly to society (environmental impact). However, other policies might be more suitable; in part: different verification methods needed	Little added value as compared to EU Organic label
	Manufacture of cider and other fruit wines	11031000 (1 code)	2320000 l				
	Manufacture of other non-distilled fermented beverages	11041000 (1 code)	480000 l				
Mineral waters, soft drinks, fruit and vegetable juices	Manufacture of soft drinks; production of mineral waters and other bottled waters	11071130-11071970 (5 codes)	108000000 l	Global Warming Potential (0,9%); photochemical oxidation(1,2%); eutrophication(0	EIPRO study on environmental impact; fruit and vegetable juice:	Improvement would bring important non-monetary benefits mainly to society (environmental impact). However,	Little added value as compared to EU Organic label

				,8%); acidification(0,9 %)	PROBAS	other policies might be more suitable; in part: different verification methods needed (audit)	
Beer	Manufacture of beer	11051000 (1 code)	38400000 l	N.A.	PROBAS; Various	Improvement would bring important non-monetary benefits mainly to society (environ-mental impact). However, other policies might be more suitable; in part: different verification methods needed (audit)	
Clothing and footwear							

Garments	Manufacture of knitted and crocheted hosiery	14311033-14311090 (5 codes)	1550000 units of Panty hose and tights and 1360000 pairs of Knitted or crocheted hosiery	Global Warming Potential (1,8%); photochemical oxidation(2,4%); eutrophication(3,9%); acidification(1,9%)	EIPRO study and ecolabel study, a little on cot-ton in PROBAS; Blue Angel Textiles	Already covered by CSES study. (More general considerations would rather point to 1): Especially if it includes impacts in earlier stages of the value chain (e.g. manufacture of yarns and tis-sues), improvement would bring high benefits mostly to society (less so to individual consumers). These would however mostly occur in third countries. These would somewhat increase cost but not too much. LCC approach not feasible. Important verification issues and probably cost if verification is	Already covered by CSES study. (More general considerations: A label would be valuable be-cause currently there is little consumer in-formation as to LC impact of textiles. However verification would be difficult and probably costly. Must re-late to non-energy issues and not be confused with current energy label)
	Manufacture of other knitted and crocheted apparel	14391031-14391090 (10 codes)	232000 units				
	Manufacture of workwear	14121120-14123023 (10 codes)	178000 units				
	Manufacture of other outerwear	14131110-14133569 (41 codes)	525000 units				
	Manufacture of underwear	14141100-14143000 (23 codes)	1310000 units				

						taken seriously, because impacts often occur in third countries and are often not measurable on the product itself.)	
Other articles of clothing and clothing accessories	Manufacture of other wearing apparel and accessories	14191100-14194300 (33 codes)	417000 units	N.A.	Blue Angel (criteria for textiles cover many of the articles)	Already covered by CSES study. (More general considerations: Especially if it includes impacts in earlier stages of the value chain, improvement would bring high benefits mostly to society (less so to individual consumers) and mostly occur in third countries. Cost would somewhat in-crease.. Important verification issues.	Already covered by CSES study. (More general considerations: A label would be valuable be-cause currently there is little consumer in-formation as to LC impact of textiles. However verification would be difficult and probably costly. Must re-late to non-energy issues and not be con-fused with cur-rent energy label
	Manufacture of articles of fur	14201030 14201090 (2 codes)	N.A.		No study identified	Environmental impacts / benefits similar to leather	Same arguments as for Ecodesign apply

						items, but a relatively unimportant product group compared to, p.ex. shoes. Is-sue: animal protection would have to be addressed by other policies.	
	Manufacture of luggage, handbags and the like, saddlery and harness	15121100-15121300 (7 codes)	75000 units		Tchibo: PCF sports bag;	Nature of environmental impact and improvement potential would depend heavily on material (textile, leather, metal, plastics?). Bad cost / benefit ratio because very detailed differentiations and provisions would have to be foreseen for a relatively small product group	Same arguments as for Ecodesign apply, although a label might have added value to customers as there is so far no LCA information on bags. Must relate to non-energy is-sues and not be confused with current energy label

Shoes and other footwear	Manufacture of footwear	15201100-15204080 (24 codes)	505000 pairs	Global Warming Potential (0,3%); photochemical oxidation(0,4%); eutrophication(0,3%); acidification(0,2%)	European and Dutch Eco-label, Blue Angel	Important product group and environmental impacts. However, the nature of impact and improvement potential would depend heavily on material (textile, leather, plastics?). Detailed differentiations and provisions would have to be foreseen. Impacts partly in third countries, verification issues as in textiles.	A label would be valuable because currently there is little consumer information as to LC impact of shoes. However verification would be difficult and probably costly. Must relate to non-energy issues and not be confused with current energy label
Furnishings, household equipment and routine maintenance of the house							
Furniture and furnishings	Manufacture of office and shop furniture	31011110-31011300 (5 codes)	75000 units	Global Warming Potential (0,6%); photochemical oxidation(1,1%); eutrophication(0,8%); acidification(0,4	Eco-label study; Nordic Swan eco-label; Dutch Eco-label; EIPRO study, Blue Angel	Improvement would bring relevant benefits to both society and individual consumers (health issues); additional cost unclear. For case study	A label would be valuable be-cause currently there is little consumer in-formation as to LC impact of furniture. Must relate to non-energy issues and not be con-fused
	Manufacture of kitchen furniture	31021000 (1 code)	106000 units				
	Manufacture of other furniture	31091230-31091450 (5 codes)	327000 units				

				%)		purposes, would suggest separation from mattresses (qualitatively different product group). Criteria development and verification probably difficult / costly as product group is very varied	with cur-rent energy label
	Manufacture of mattresses	31031230-31031290 (4 codes)	51000 units			Improvement would bring relevant benefits to both society and individual consumers (health issues); additional cost unclear. For case study purposes, would suggest separation from furniture (qualitatively different product group).	A label would be valuable because currently there is little consumer information as to LC impact of mattresses. Must relate to non-energy issues and not be confused with current energy label

Carpets and other floor coverings	Manufacture of carpets and rugs	13931100-13931990 (5 codes)	855000 m2	Global Warming Potential (0,3%); photochemical oxidation(0,6%); eutrophication(0,7%); acidification(0,3%)	EIPRO study; Blue Angel	Floor coverings covered by CSES study. (More general considerations point to 1: Improvement would bring relevant benefits to both society and individual consumers (health issues); additional cost unclear.)	Floor coverings covered by CSES study. (More general considerations point to 1: A label would be valuable because currently there is little consumer information as to LC impact of carpets. Must relate to non-energy issues and not be confused with current energy label
Household textiles	Manufacture of made-up textile articles, except apparel	13921130-13922990 (33 codes)	380000 kg and 23000 units of blankets	Global Warming Potential (0,1%); photochemical oxidation(0,3%); eutrophication(0,4%); acidification(0,5%)	EIPRO study; Blue Angel Textiles	Especially if it includes impacts in earlier stages of the value chain, improvement would bring high benefits mostly to society (less so to individual consumers) and mostly occur in third countries.	A label would be valuable because currently there is little consumer information as to LC impact of textiles. However verification would be difficult and probably costly.
	Manufacture of cordage, rope, twine and netting	13941130-13941280 (12 codes)	327000 kg				

						Cost would somewhat in-crease. Important verification issues.	
Glassware, tableware and household utensils	Manufacture of hollow glass	23131110-23131400 (18 codes)	81300000 units	Global Warming Potential (0,3%); photochemical oxidation(0,5%) ; eutrophication(0,1%); acidification(0,2%)	EIPRO study and ecolabel study; Blue Angel floor coverings	Heterogeneous product groups with relatively small impact, therefore bad cost-benefit ratio	Heterogeneous product groups with relatively small impact, therefore bad cost-benefit ratio
	Manufacture of builders' ware of plastic	22231155 22231159 22231190 22231250 (4 codes)	310000 m2				
	Manufacture of ceramic household and ornamental articles	23411130-23411350 (8 codes)	370000 units				
	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting	16291130-16292500 (16 codes)	506000 kg				
	Manufacture of other ceramic products	23491100 23491230 23491255 23491259(4 codes)	13600000 kg				
	Manufacture of ceramic sanitary fixtures	23421030 23421050 (2 codes)	43000 units			According to EIPRO there might be a benefit (check definition of product groups); cost un-clear	Seldom purchased by end consumer

	Manufacture of assembled parquet floors	16221030 16221060 (2 codes)	104000 m2			Floor coverings covered by CSES study. (More general considerations point to 1: Environmental benefit mainly to society and in third countries (wood, logging). Some health issues for consumers (toxic substances). Additional manufacturing cost unclear; verification issues might be solved by relying on e.g. FSC standards	Floor coverings covered by CSES study. Overlap with FSC, although the label does not cover all LC environmental aspects and is voluntary. Alternative: strengthening of FSC?
Small tools and miscellaneous accessories	Manufacture of cutlery	25711115-25711500 (14 codes)	5420000 units	N.A.	EIPRO for cutlery and some tools	No known relevant impacts	No known relevant impacts

	Manufacture of locks and hinges	25721130-25721480 (16 codes)	1000000 units of metal locks and 2040000 kg of other metal articles				
	Manufacture of tools	25731010-25736090 (79 codes)	2170000 kg				
Non-durable household goods/Adhesive and sealants	Manufacture of essential oils	20521020 20521040 20521060 20521080 (4 codes)	3400000 kg	Global Warming Potential (0,5%); photochemical oxidation(0,8%); eutrophication(0,8%); acidification(0,5%)	Eco-label study; Nordic Swan eco-label; Dutch Eco-label; EIPRO study for Dishwasher detergents; Nordic Swan eco-label for adhesives and sealants	No known relevant impacts	No known relevant impacts
	Manufacture of soap and detergents, cleaning and polishing preparations	20413120-20414389 (15 codes)	1220000 kg			Covered by CSES study. (More general considerations point to 2: Improvement would provide relevant benefit to both consumers and society (eutrophication, hazardous	Covered by CSES study. (More general considerations point to 1: Some label might be helpful to pro-vide an aggregate idea of environmental impact (as detailed declarations are not always

						substances, health issues); additional cost unclear; no relevant verification issues; synergies with Ecolabels	understandable). Focus on non-energy impacts, not to be con-fused with Energy label
	Manufacture of pesticides and other agrochemical products	20201130-20201980 (25 codes)	1380000 kg act. Subst.			Relevant impact, but would probably be regulated in different policy framework	Some label might be helpful to provide an aggregate idea of environmental impact (as de-tailed declarations are not al-ways understandable). Focus on non-energy impacts, not to be con-fused with Energy label
Materials for the maintenance and repair of the dwelling	Manufacture of ceramic tiles and flags	23311010-23311079 (8 codes)	1000000 m2	N.A.	Eco-label study; Nordic Swan eco-label; Dutch Eco-label; EIPRO study; Blue Angel paint, wallpaper; PROBAS	As floor coverings covered by CSES study. Important embedded energy in manufacturing phase. However, no verification on the product possible. Ceramics: Other	As floor coverings covered by CSES study. probably little added value (in relation to cost) of labelling embedded energy because it is would not be a relevant factor in the
	Manufacture of cement	23511100 23511210 23511290 (3 codes)	200000000 kg				

					paint, cement	impacts to check? But would pose problems / cosed because of lack of data	purchasing decision
	Manufacture of wallpaper	17241200 (1 code)	2000 kg			See other paper products. Some impact that could successfully regulated by Ecodesign (energy use during production phase, additives etc.). Main difference is between fresh fibre paper and recycled pa-per though => how to deal with system question?	A label that clearly indicates the difference in environmental impact (water use, energy use, logging) could make sense. Should be clearly distinguished from current energy label
	Manufacture of paints, varnishes and similar coatings, printing ink and mastics	20302170-20302470 (15 codes)	9000000 kg			Improvement would provide relevant benefit to both consumers and society (hazardous sub-stances, health issues); addition-al cost unclear; no relevant	Overlap with voluntary labels (check how widely they are used though; paint label is used widely in Germany)

						verification issues; synergies with Eco-labels	
Miscellaneous goods and services							
Other appliances, articles and products for personal care	Manufacture of perfumes and toilet preparations	20421150-20421990 (19 codes)	120000 l of perfume and 1120000 kg of soap	Global Warming Potential (0,8%); photochemical oxidation(1,3%); eutrophication(0,3%); acidification(0,6%)	EIPRO study; Eco-label study for soaps and shampoos	Improvement would provide relevant benefit to both consumers and society (eutrophication, hazardous substances, health issues); additional cost unclear; no relevant verification issues; synergies with Ecolabels. Too close to CSES study?	Some label might be helpful to provide an aggregate idea of environmental impact (as de-tailed declarations are not always understandable). Focus on non-energy impacts, not to be confused with Energy label. Too close to CSES study?
	Manufacture of household and sanitary goods and of toilet requisites	17221120-17221300 (11 codes)	10000000 kg			Mainly paper products (hygiene papers / tissues, paper trays etc.), therefore the considerations for paper apply: Some impact that could successfully	Mainly paper products (hygiene papers / tissues, paper trays etc.), therefore the considerations for paper apply: A label that clearly indicates the

						regulated by Ecodesign (energy use during production phase, additives etc.). Main difference is be-tween fresh fibre paper and recycled paper though => how to deal with system question?	difference in environmental impact (water use, energy use, logging) could make sense. Should be clearly distinguished from current energy label
Jewellery, clocks and watches	Manufacture of jewellery and related articles	32121100-32121400 (7 codes)	N.A.	Global Warming Potential (0,1%); photochemical oxidation(0,2%); eutrophication(0,1%); acidification(0,2%)	EIPRO (named "Jewelry") Various others for gold and gem-stones	Improvement would bring noticeable benefits (human- and eco-toxicity) mostly to society (less so to individual consumers) and mostly in third countries (mining and processing of gemstones / precious metals). Impact on cost unclear. Important verification issues. Other policies more suitable? If	no good cost-benefit relation of mandatory label as it would probably have little impact on purchase decision; voluntary label makes more sense

						approach should be tested, preferably with textiles (more sales)	
	Manufacture of imitation jewellery and related articles	32201110 -32201600 (10 codes)	4000 units			No evidence for relevant impact	No evidence for relevant impact
Equipment for sport, camping and open-air recreation	Manufacture of sports goods	32301131-32301600 (12 codes)	78000 units	photochemical oxidation(0,1%); acidification(0,1%)	EIPRO table; Blue Angel for textile toys; phased-out Blue Angel for wooden toys	No strong impact according to EIPRO => little benefit	No strong impact according to EIPRO => little benefit
Games, toys and hobbies	Manufacture of games and toys	32403100-32404210 (5 codes)	400000 kg of Playing cards and 145000 units of other toys			Some impact, but extremely heterogeneous product group; Ecodesign approach would not seem feasible or cause enormous effort / cost	Some impact, but extremely heterogeneous product group; comprehensive labelling approach would not seem feasible or cause enormous effort / cost
Health							
Therapeutic appliances and equipment	Manufacture of medical and dental instruments and supplies	32501311-32505030 (24 codes)	4200000 units	Global Warming Potential (0,1%); photochemical oxidation(0,1%); acidification(0,1%)	EIPRO study	Very heterogeneous product group where functional considerations dominate	Little to no impact on purchasing decision expected
Recreation and culture							

Stationery and drawing materials	Manufacture of paper stationery	17231100-17231400 (15 codes)	2300000 kg	N.A.	Nordic Swan eco-label for paper envelopes; Dutch Eco-label for paper and candles; PROBAS (paper); Blue An-gel (many paper products);	Some impact that could successfully regulated by Ecodesign (energy use during production phase, additives etc.). Main difference is between fresh fibre paper and recycled paper though => how to deal with system question?	A label that clearly indicates the difference in environmental impact (water use, energy use, logging) could make sense. Should be clearly distinguished from current energy label
	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard	17211100-17211550 (7 codes)	3860000 kg				
	Manufacture of paper and paperboard	17121100-17127970 (54 codes)	8500000 kg				
	Manufacture of other articles of paper and paperboard	17291120-17291985 (11 codes)	3700000 kg				
	Other manufacturing n.e.c.	32991210 -32991350 and 32995400 (6 codes)	5800000 units of pens and pencils and 600000 candles			extremely heterogeneous product group with no evidence for relevant impact	extremely heterogeneous product group with no evidence for relevant impact
	Manufacture of brooms and brushes	32911110-32911970 (10 codes)	3700000 units			no evidence for relevant impact	no evidence for relevant impact
Miscellaneous printed matter	Other printing	18121100-18121990 (17 codes)	4000000 kg	N.A.	Dutch Eco-label and Eco-	As Ecodesign is a product-related approach, it could	As Ecodesign is a product-related approach, it could

					label study	rather be applied on the paper (and maybe ink) than the printing itself	rather be applied on the paper (and maybe ink) than the printing itself
Newspapers and periodicals	Printing of newspapers	18111000 (1 code)	4200000 kg	N.A.	Dutch Eco-label; Blue Angel newspaper printing paper	As Ecodesign is a product-related ap-proach, it could rather be applied on the paper (and maybe ink) than the print-ing itself	As Ecodesign is a product-related approach, it could rather be applied on the paper (and maybe ink) than the printing itself
Means of transport							
Motorized road transport	Manufacture of agricultural and forestry machinery	28302100-28302390 (6 codes)	300 units	N.A.	No study identified	For all motorized means of transport: High impact, especially in use phase, high benefits to expect mainly for society (less so individual users); experience exists because problem structure similar to EuP. However, Agricultural machines are very specific and not sold in great numbers;	Would probably not affect purchasing decision

						therefore probably not efficient tool.	
	Manufacture of motor vehicles	29102100-29105950 (18 codes)	20000 units	EIPRO: High level of impact per Euro spent for all environmental impact categories for passenger cars	JRC – IPTS studies on environmental impact and improvement potential	For all motorized means of transport: High impact, especially in use phase, high benefits to expect mainly for society (less so individual users); experience exists because problem structure similar to EuP.	Might be merged with / replace CO2 label to have consistent approach
	Manufacture of motorcycles	30911100 30911200 (2 codes)	1358 units	N.A.	No study identified		
	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers	29202230 29202250 (2 codes)	128 units	N.A.	No study identified		
Water transport	Building of pleasure and sporting boats	30121100 30121200 30121930 30121970 (4 codes)	187 units	N.A.	No study identified	For all motorized means of transport: High impact, especially in use phase, high benefits to expect mainly for society (less so individual users); experience exists because problem structure similar to EuP.	Would probably little or not affect purchasing decision
	Building of ships and floating structures	30112130-30113350 (17 codes)	2817 units	N.A.	No study identified		

						However, ships are quite specific and not sold in great numbers; therefore probably not efficient tool. Also, data problems	
Rail transport	Manufacture of railway locomotives and rolling stock	30201100 30201200 30201300 30202000 (4 codes)	4 units	N.A.	Various (Allianz Pro Schiene, Oeko-Institut, Umweltbundesamt)	For all motorized means of transport: High impact, especially in use phase, high benefits to expect mainly for society (less so individual users); experience exists be-cause problem structure similar to EuP. However, rail-way stock are quite specific and not sold in great numbers; therefore probably not efficient tool.	Would probably not affect purchasing decision
Air transport	Manufacture of air and spacecraft and related machinery	30301100-30303400 (11 codes)	36 units		VascoLopez, Airbus		Would probably not affect pur-chasing deci-sion

Non-motorized road transport	Manufacture of bicycles and invalid carriages	30921030 30921050 30924030 (3 codes)	12670 units	N.A.	Oeko-Institut, bicycles	No relevant impact	No relevant impact
	Manufacture of other transport equipment n.e.c.	30991000 (1 code)	13117 units	N.A.	No study identified	Unclear what it is, no evidence for relevant impact	Unclear what it is, no evidence for relevant impact

Table 3 Ranking of product groups

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
Meat	Processing and preserving of meat	2	2	2	2	1	0	9
	Processing and preserving of poultry meat							
	Production of meat and poultry meat products							
Bread and cereals	Manufacture of grain mill products	2	2	2	2	1	0	9
	Manufacture of starches and starch products							
	Manufacture of bread; manufacture of fresh pastry goods and cakes							
	Manufacture of rusks and biscuits; manufacture of							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	preserved pastry goods and cakes							
	Manufacture of macaroni, noodles, couscous and similar farinaceous products							
Fruit and Vegetables	Manufacture of fruit and vegetable juice	2	2	2	2	1	0	9
	Other processing and preserving of fruit and vegetables							
	Processing and preserving of potatoes							
Materials for the maintenance and repair of the dwelling	Manufacture of ceramic tiles and flags	2	0	2	2	2	1	9
	Manufacture of paints, varnishes and similar coatings, printing ink and mastics							
	Manufacture of cement							
	Manufacture of wallpaper							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
Other appliances, articles and products for personal care	Manufacture of perfumes and toilet preparations	2	1	1	2	2	1	9
	Manufacture of household and sanitary goods and of toilet requisites							
Motorized road transport	Manufacture of agricultural and forestry machinery	0	2	2	0	2	2	8
	Manufacture of motorcycles							
	Manufacture of motor vehicles							
	Manufacture of bodies (coachwork) for motor vehicles; manufacture of trailers and semi-trailers							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
Mineral waters, soft drinks,fruit and vegetable juices	Manufacture of soft drinks; production of mineral waters and other bottled waters	2	1	2	2	1	0	8
Garments	Manufacture of knitted and crocheted hosiery	2	2	2	2	0	0	8
	Manufacture of other knitted and crocheted apparel							
	Manufacture of workwear							
	Manufacture of other outerwear							
	Manufacture of underwear							
Shoes and other footwear	Manufacture of footwear	1	1	2	2	1	1	8
Non-durable household goods/Adhesive and sealants	Manufacture of essential oils	2	1	2	2	0	1	8
	Manufacture of soap and detergents, cleaning and polishing							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	preparations							
	Manufacture of pesticides and other agrochemical products							
Furniture and furnishings	Manufacture of office and shop furniture	1	1	2	2	1	1	8
	Manufacture of kitchen furniture							
	Manufacture of mattresses							
	Manufacture of other furniture							
Oils and fats	Manufacture of oils and fats	2	1	2	2	1	0	8
	Manufacture of margarine and similar edible fats							
Coffee, tea and cocoa	Manufacture of cocoa, chocolate and sugar confectionery	2	1	2	2	1	0	8
	Processing of tea and							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	coffee							
Fish and seafood	Processing and preserving of fish, crustaceans and molluscs	1	1	2	2	1	0	7
	production of fish – either fishery or aqua-culture							
Stationery and drawing materials	Manufacture of paper stationery	1	0	2	2	1	1	7
	Manufacture of corrugated paper and paperboard and of containers of paper and paperboard							
	Manufacture of paper and paperboard							
	Other manufacturing n.e.c.							
	Manufacture of brooms and brushes							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	Manufacture of other articles of paper and paperboard							
Household textiles	Manufacture of made-up textile articles, except apparel	1	0	2	2	1	1	7
	Manufacture of cordage, rope, twine and netting							
Other articles of clothing and clothing accessories	Manufacture of other wearing apparel and accessories	1	0	2	2	1	1	7
	Manufacture of articles of fur							
	Manufacture of luggage, handbags and the like, saddlery and harness							
Glassware, tableware and household utensils	Manufacture of hollow glass	2	1	2	2	0	0	7
	Manufacture of builders' ware of plastic							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	Manufacture of ceramic household and ornamental articles							
	Manufacture of other products of wood; manufacture of articles of cork, straw and plaiting							
	Manufacture of assembled parquet floors							
	Manufacture of ceramic sanitary fixtures							
	Manufacture of other ceramic products							
Wine	Manufacture of wine from grape	1	1	2	2	1	0	7
	Manufacture of cider and other fruit wines							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	Manufacture of other non-distilled fermented beverages							
Carpets and other floor coverings	Manufacture of carpets and rugs	1	1	2	2	0	0	6
Sugar, jam, honey, chocolate and confectionery	Manufacture of ice cream	2	0	1	2	1	0	6
	Manufacture of sugar							
Tobacco	Manufacture of tobacco products	2	1	1	0	1	0	5
Miscellaneous printed matter	Other printing	2	0	1	2	0	0	5
Food products n.e.c.	Manufacture of condiments and seasonings	2	0	0	2	1	0	5
	Manufacture of prepared meals and dishes							
	Manufacture of homogenised food preparations and dietetic food							
	Manufacture of other							

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	food products n.e.c.							
Beer	Manufacture of beer	1	0	2	1	1	0	5
Pets and related products	Manufacture of prepared feeds for farm animals Manufacture of prepared pet foods	2	0	0	1	0	1	4
Small tools and miscellaneous accessories	Manufacture of cutlery Manufacture of locks and hinges Manufacture of tools	2	0	1	1	0	0	4
Newspapers and periodicals	Printing of newspapers	1	0	1	2	0	0	4
Therapeutic appliances and equipment	Manufacture of medical and dental instruments and supplies	2	0	1	1	0	0	4
Spirits	Distilling, rectifying and blending of spirits	1	0	0	2	1	0	4
Games, toys and hobbies	Manufacture of games and toys	0	0	1	2	0	0	3
Jewellery, clocks and watches	Manufacture of jewellery and related articles	0	0	1	1	0	0	2

Product group/category (COICOP)	PRODCOM categories	Sold Volume	Main environmental impact areas	LCA relevant information available	Suitability for ED and ELD	Assessment of the possible costs / risks and benefits of Ecodesign	Assessment of the possible costs / risks and benefits of Labelling	Total
	Manufacture of imitation jewellery and related articles							
Equipment for sport, camping and open-air recreation	Manufacture of sports goods	0	0	0	1	0	0	1
Water transport	Building of ships and floating structures	0	0	0	1	0	0	1
	Building of pleasure and sporting boats							
Rail transport	Manufacture of railway locomotives and rolling stock	0	0	0	1	0	0	1
Air transport	Manufacture of air and spacecraft and related machinery	0	0	0	1	0	0	1
Non-motorized road transport	Manufacture of bicycles and invalid carriages	0	0	0	1	0	0	1
	Manufacture of other transport equipment n.e.c.							

3.3 Case Studies[4]

Based on the ranking, market-size of the individual product, coverage of different product groups, data availability, competences and experiences in the consortium, and sufficient difference to case studies conducted in the CSES study, five case-studies were selected. The rationales for choosing the case studies are the following:

- The product has a high market share, or high identified environmental impact, within the higher level product group
- the product represents the product group as a whole in the sense that it poses similar issues than other products in this group
- The different products selected reflect different activities (transportation, farming (animal raising and crop raising) and industrially produced products)
- good data available
- not too close to the PG already dealt with by CSES
- existing expertise in the consortium.

The following 5 case-studies were selected which are thought to be representative of the entire product group they belong to:

1. Motorized road transport: **Trucking / Heavy-Duty Vehicles**;
2. Milk, cheese and eggs: **Dairy products**;
3. Bread and cereals: **Fresh bread**;
4. Materials for the maintenance and repair of the dwelling: Manufacture of **paints and varnishes**;
5. Garments: **T-Shirts**

[4] Identical to the text in the First Findings and Recommendations report

4 Final ranking

The evaluation carried out in the previous steps led to the conclusion that there is a need to consider three main issues in the selection of products to be covered: necessity, feasibility, and added value. As an aid to the final ranking of products and to the future evaluation of the possibility for scope expansion of individual products groups, a decision tree was developed (also taking into account lessons learned from the case-studies[5]). If a decision is made to expand the scope a decision tree similar to the one shown below should be used for the selection of products to be covered. Although there are considerable similarities for certain broad product groups (higher level), steps must, in principle, be followed for each lower level product group separately, as results can be very different for different products within the same broad categories.

In principle, this assessment has to be conducted twice, at two regulatory levels:

1) In order to decide whether the Framework Directives should be extended to non-ErP at all, it must be checked whether a sufficient number of products exists for which the application of ELD and ED would be worthwhile. This is what the current study attempts at. Naturally, it does so in a rather broad way because no detailed assessment for all individual product groups was possible.
2) Once the general decision has been made at the level of the Framework Directive, Workplan Studies must decide which product groups to include. At this stage, the exercise will have to be repeated in more detail and based on solid data by the consultants doing the Workplan Studies.

Although the questions are set in a Yes / No format, answers may not be straightforward and often need some kind of judgment, involving a balancing of pros and cons or the comparison against other known values. The balance between each of the issues - necessity, feasibility and added value - must also be considered carefully. For example, even if necessity is there for some products, and feasibility can be assured, added value will have to be carefully considered, thinking about the suitability of the instrument and possible alternatives, and the available resources. Therefore, a scoring model has been developed from the questions of the decision tree. It is presented in more detail below.

The main issues relating to the **necessity** of a regulation are the existence of an identified relevant environmental impact and a potential for improvement that has not been realized so far due to market failures. Both impact and improvement potential are also linked to sold volume. The fact that the main impacts may already be covered by other existing measures may also influence the decision on necessity.

[5] Please note that the decision tree was not applied to the case-studies

Environmental impact and improvement potential have been identified for a number of product groups, particularly for food and drink products, private transportation and housing which were found to cause 70-80% of the various environmental impacts of total private consumption in the EU-25, based on a life cycle analysis. Food and drink account for 20-30% of those impacts. Within this consumption area, meat and meat products (including meat, poultry, sausages or similar) are the most important, followed by dairy products. For private transportation the total environmental impacts ranges from 15 to 35% of all private consumption impacts, depending on the impact category, and the largest contribution comes from passenger cars. The products under the heading of housing include buildings, furniture, domestic appliances, and energy for purposes such as room and water heating. Together they make up 20 to 35% of the impacts of all products for most impact categories (IPTS 2006).

If necessity is acknowledged, the question of **feasibility** then arises and a number of challenges may present themselves, such as:

- Methodologies for determining impacts of other use phases and aggregate them on a label (including harmonized standards, data availability)
- Enforceability: Measurability of impacts on the product; alternative methods of verification
- Priority setting in the face of limited resources (MS, Commission)
- Heterogeneity of product groups
- Impact of including life cycle impacts in energy label on manufacturers/importers

The **added value** of setting ecodesign requirements or labels is very dependant of factors that are not so straightforward to evaluate, such as:

- Are the impacts better tackled by other instruments?
- Will the introduction of new legislation impair existing regulation (e.g. by adding confusion)?
- Is the burden introduced to manufacturers manageable?

For each of the identified product groups an analysis is carried out and the necessity, feasibility and added value are evaluated. As an information basis, we use the results obtained from the case studies, as far as they can be generalized to other, similar products, and stakeholder input we received during the consultation. The results are shown in Table 4.

In Table 5, the assessment is further developed into a final ranking. An evaluation of these three broad criteria was carried out for the product groups identified in the initial selection. This evaluation produced a final ranking of products which sorts products according to their suitability for the inclusion in the scope of the ED and the ELD. The ranking does not imply a judgement on whether or not scope expansion is recommended in general but highlights which products are most suitable in case a political decision for scope expansion should be taken.
It should be noted that the analysis carried out here is limited to readily available information and to the time constraints of a study of this nature and does not replace an in-depth analysis for each product group, based on the decision tree (or a similar approach) that is presented here, if and when there is a decision to expand the scope to non-ErPs.

The ranking has been developed according to the following scoring model:

Necessity
> Environmental impact: a "yes" answer scores 2 points, a "limited" answer scores 1, a "no" answer scores 0 points
> Improvement potential: a "yes" answer scores 2 points, a "limited" answer scores 1 point, a "no" answer scores 0 points
> Sold volume: a "yes" answer scores 2 points, a "no" answer scores 0 points
> Existence of other legislation: a "no" answer scores 2 points, a "yes" answer scores 0 points, a "partly" answer scores 1 point

Feasibility
> Measurability of impact: a "yes" answer scores 2 points, a "smaller part" answer scores 1 point, a "no" answer scores 0 points
> Existence of methodology: a "yes" answer scores 2 points, a "no standard methodology" answer scores 0 points
> Possibility to define meaningful scope: "meaningful scope can be defined" scores 2 points, "heterogeneous" scores 1 point, a "very heterogeneous" scores 0 points
> Stakeholder attitude: "mostly critical" scores 0 points, "some in favour" scores 1 point, "mostly in favour" scores 2 points. When the stakeholder attitude on a specific product is unknown, the general attitude on scope extension has been used.
> Regulatory burden: "high" scores 0 points, "medium" scores 1 point, "low" scores 2 points

Added value (cost-benefit ratio)
> Has been ranked negative (0 points), moderately positive (1 point) or strongly positive (2 points) according to the qualitative arguments put forward above.

In a second step, the points for each of the categories were aggregated in order to give them equal weight.

Necessity: 0-2 points: overall "0"; 3-5 points: overall "1", 6-8 points: overall "2". In addition, aggregated necessity scored 0 if environmental impact, improvement potential, or sold volume scored 0.
Feasibility: 0-2 points: overall "0"; 3-6 points: overall "1", 7-10 points: overall "2"
Added value: 0 points: overall "0"; 1 point: overall "1", 2 points: overall "2"

A product group was excluded if any of the three aggregated categories scored 0 (meaning no necessity, no feasibility, or no added value). Excluded product groups are shown at the end of the ranking.

The remaining product groups were ranked according to the sum of the individual sub-categories (as this provides more differentiation than the sum of the three aggregated categories. It should be noted that in the final ranking, and apart from transportation, feasibility is considered relatively low (maximum score 4/10) mainly due to measurability and methodological limitations.

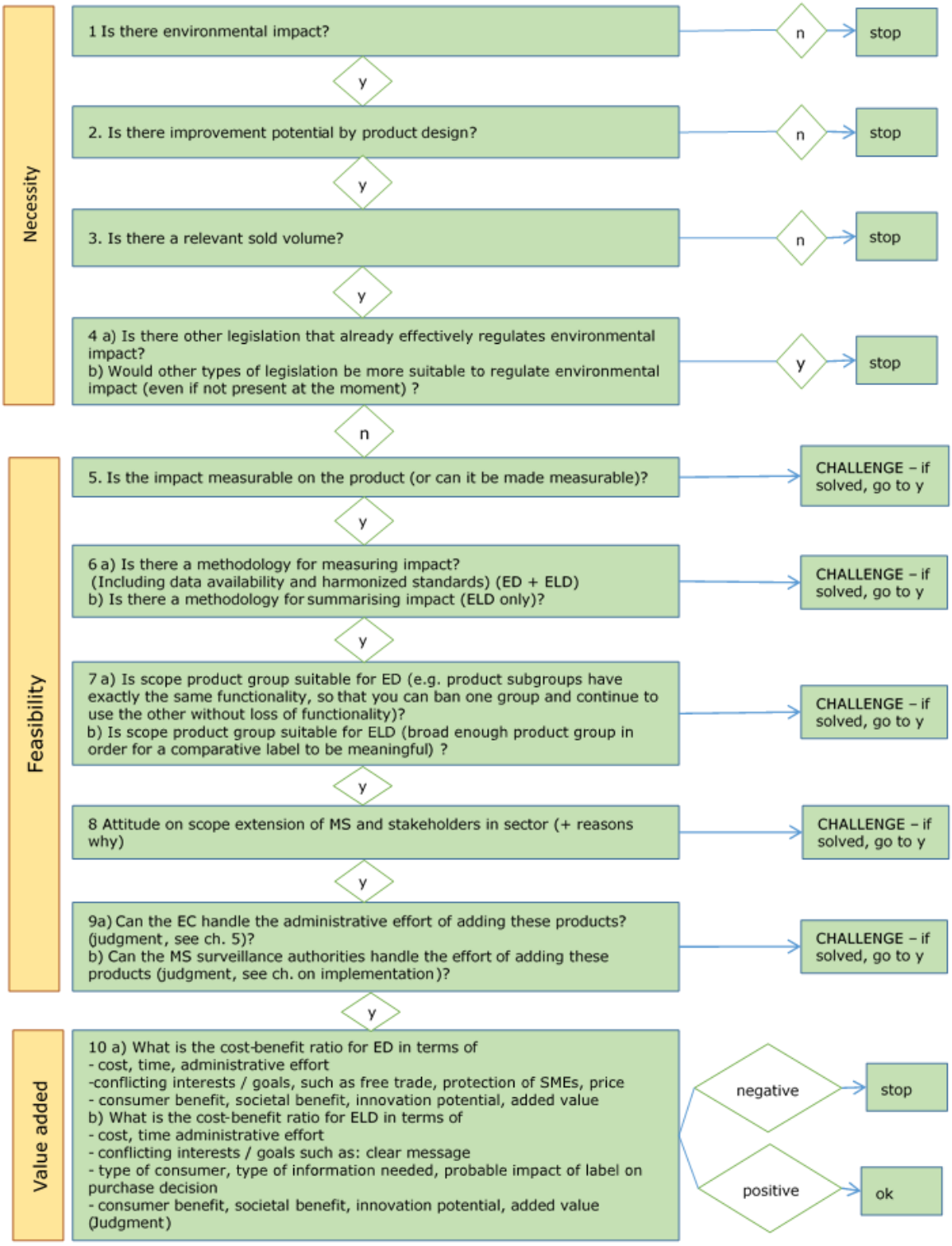

Figure 3 Decision tree for the selection of product groups

Table 4 Assessment of necessity, feasibility and value added

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Milk, cheese and eggs-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Milk, cheese and eggs-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) BUT: maybe for products used in the manufacturing phase (refrigerators, etc…). Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Meat – label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Meat – ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) BUT: maybe for products used in the manufacturing phase (orefrigerators, etc…). Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Bread and cereals – label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Bread and cereals - ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) BUT: maybe for products used in the manufacturing phase (ovens, refrigerators…). Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Fruit and Vegetables – label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Fruit and Vegetables - ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Materials for the maintenance and repair of the dwelling - label	yes	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	Limited (Probably little added value (in relation to cost) of labelling embedded energy)
Materials for the maintenance and repair of the dwelling - ecodesign	Yes	limited	yes	Partial (e.g. REACH; Regulation 305/2011)	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	Some impact that could successfully regulated by Ecodesign (energy use during production phase, additives etc.). Improvement would provide relevant benefit to both consumers and society (hazardous sub-stances, health issues); synergies with Eco-labels

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Other appliances, articles and products for personal care-label	yes	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	Some label might be helpful to provide an aggregate idea of environmental impact (as detailed declarations are not always understandable). Focus on non-energy impacts, not to be confused with Energy label.
Other appliances, articles and products for personal care - ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	Improvement would provide relevant benefit to both consumers and society (eutrophication, hazardous substances, health issues). Mainly paper products (hygiene papers / tissues, paper trays etc.), therefore the considerations for paper apply: Some impact that could successfully regulated by Ecodesign (energy use during production phase, additives etc.).
Motorized road transport-label	yes	yes	yes	partly (CO2 and tyre labelling); could be integrated	Yes	Yes	meaningful scope can be defined	mostly critical	medium (partly in place for existing legislation)	As in this product group, the purchasing decision is almost exclusively determined by functional aspects and necessities, a label would probably not affect purchasing decision. Might be merged with / replace CO2 label to have consistent approach
Motorized road transport-ecodesign	Yes	Yes	yes	partly (emission standards); integration	Yes	yes	meaningful scope can be defined	mostly critical	medium (partly in place for existing legislatio	For all motorized means of transport: High impact, especially in use phase, high benefits to expect mainly for society (less so

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
				difficult					n)	individual users); experience exists because problem structure similar to EuP.
Mineral waters, soft drinks,fruit and vegetable juices-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (little added value as compared to EU Organic label)
Mineral waters, soft drinks,fruit and vegetable juices - ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Garments-label	yes	limited	yes	No	smaller part (components)	no standard methodology	heterogeneous	partly in favor	high	A label could be valuable be-cause currently there is little consumer in-formation as to LC impact of textiles. However verification would be difficult and probably costly. Must re-late to non-energy issues and not be confused with current energy label)
Garments-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	heterogeneous	partly in favor	high	Limited (Especially if it includes impacts in earlier stages of the value chain (e.g. manufacture of yarns and tis-sues), improvement would bring high benefits mostly to society (less so to individual consumers).

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Shoes and other footwear-label	yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	A label could be valuable be-cause currently there is little consumer in-formation as to LC impact of textiles. However verification would be difficult and probably costly. Must re-late to non-energy issues and not be confused with current energy label)
Shoes and other footwear-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	Limited (Important product group and environmental impacts. However, the nature of impact and improvement potential would depend heavily on material (textile, leather, plastics?). Detailed differentiations and provisions would have to be foreseen. Impacts partly in third countries, verification issues as in textiles.)
Non-durable household goods/Adhesive and sealants-label	yes	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	partly in favour (detergent)	high	Some label might be helpful to pro-vide an aggregate idea of environmental impact (as detailed declarations are not always understandable). Focus on non-energy impacts, not to be con-fused with Energy label
Non-durable household goods/Adhesive and Sealants-	Yes	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	partly in favour (detergent)	high	Improvement would provide relevant benefit to both consumers and society (eutrophication, hazardous substances,

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
ecodesign										health issues)
Furniture and furnishings-label	yes	limited	yes	No	smaller part (components)	no standard methodology	Heterogeneous	partly in favour (mattresses, furniture)	high	A label could be valuable be-cause currently there is little consumer in-formation as to LC impact of furniture. Must relate to non-energy issues and not be con-fused with cur-rent energy label
Furniture and furnishings-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	Heterogeneous	partly in favour (mattresses, furniture)	high	Improvement would bring relevant benefits to both society and individual consumers (health issues); additional cost unclear.
Oils and fats-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	Heterogeneous	mostly critical	high	limited (in the face of organic label)
Oils and fats-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	Heterogeneous	mostly critical	high	limited (in the face of existing legislation) Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Coffee, tea and cocoa-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Coffee, tea and cocoa-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Fish and seafood-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Fish and seafood-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) Improvement would bring high non-monetary benefits mainly to society in case of fisheries and to both consumers and society in case of aquaculture, but probably at higher cost
Stationery and drawing materials-label	yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	A label that clearly indicates the difference in environmental impact (water use, energy use, logging) could make sense. Should be clearly distinguished from current energy label
Stationery and drawing materials-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	Some impact that could successfully regulated by Ecodesign (energy use during production phase, additives etc.).
Household textiles-label	yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	partly in favor	high	A label could be valuable because currently there is little consumer in-formation as to LC impact of textiles. However

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
										verification would be difficult and probably costly.
Household textiles-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	partly in favor	high	Especially if it includes impacts in earlier stages of the value chain, improvement would bring high benefits mostly to society (less so to individual consumers) and mostly occur in third countries. Cost would somewhat in-crease.
Other articles of clothing and clothing accessories-label	yes	limited	yes	No	smaller part (components)	no standard methodology	Heterogenous	partly in favor	high	Some label might be helpful to provide an aggregate idea of environmental impact (as de-tailed declarations are not always understandable). Focus on non-energy impacts, not to be confused with Energy label. Mainly paper products (hygiene papers / tissues, paper trays etc.), therefore the considerations for paper apply: A label that clearly indicates the difference in environmental impact (water use, energy use, logging) could make sense.
Other articles of clothing and clothing accessories-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	partly in favor	high	Improvement would provide relevant benefit to both consumers and society (eutrophication, hazardous substances, health issues). Mainly

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
										paper products (hygiene papers / tissues, paper trays etc.), therefore the considerations for paper apply: Some impact that could successfully regulated by Ecodesign (energy use during production phase, additives etc.).
Glassware, tableware and household utensils-label	yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	Heterogeneous product groups with relatively small impact, therefore bad cost-benefit ratio
Glassware, tableware and household utensils-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	Heterogeneous product groups with relatively small impact, therefore bad cost-benefit ratio
Wine-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Wine-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) maybe for products used in the manufacturing phase Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Carpets and other floor coverings-label	yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	A label would be valuable be-cause currently there is little consumer information as to LC impact of carpets. Must

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
										relate to non-energy issues and not be confused with current energy label
Carpets and other floor coverings-ecodesign	Yes	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	Improvement would bring relevant benefits to both society and individual consumers (health issues);
Sugar, jam, honey, chocolate and confectionery-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Sugar, jam, honey, chocolate and confectionery-ecodesign	yes	limited (processing stage)	Yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) BUT: maybe for products used in the manufacturing phase Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Tobacco-label	yes	limited (processing stage)	yes	yes	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	Already heavily regulated
Tobacco-ecodesign	Yes	limited (processing stage)	yes	yes	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation)

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Miscellaneous printed matter-label	No	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	No known relevant impacts
Miscellaneous printed matter-ecodesign	No	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	As Ecodesign is a product-related approach, it could rather be applied on the paper (and maybe ink) than the printing itself
Food products n.e.c.-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	Very Heterogenous	mostly critical	high	limited (in the face of organic label)
Food products n.e.c.-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	Very Heterogenous	mostly critical	high	limited (in the face of existing legislation) BUT: maybe for products used in the manufacturing phase (ovens, refrigerators…). Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at higher cost
Beer-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Beer-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) BUT: maybe for products used in the manufacturing phase Improvement would bring some non-monetary benefits to consumers (less so to society), but probably at

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
										higher cost
Pets and related products-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	Very heterogeneous	mostly critical	high	limited (in the face a mandatory organic label for pet food (as this product group addresses individual consumers)
Pets and related products-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	Very heterogeneous	mostly critical	high	limited (in the face of Feed for farm animals is a subordinate aspect to meat production) : bad cost-benefit relation because data would be difficult to get; overlap with meat and other food products
Small tools and miscellaneous accessories-label	No	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	No known relevant impacts
Small tools and miscellaneous accessories-ecodesign	No	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	No known relevant impacts
Newspapers and periodicals-label	No	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	No known relevant impacts
Newspapers and periodicals-ecodesign	No	limited	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	As Ecodesign is a product-related ap-proach, it could rather be applied on the paper (and maybe ink) than the print-ing itself

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Therapeutic appliances and equipment-label	limited	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	As in this product group, the purchasing decision is almost exclusively determined by functional aspects and necessities, little to no impact on purchasing decision is expected
Therapeutic appliances and equipment-ecodesign	limited	limited	yes	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	Very heterogeneous product group where functional considerations dominate
Spirits-label	yes	limited (processing stage)	yes	partly (organic label)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of organic label)
Spirits-ecodesign	Yes	limited (processing stage)	yes	partly (CAP, food law)	smaller part (ingredients)	no standard methodology	meaningful scope can be defined	mostly critical	high	limited (in the face of existing legislation) BUT: maybe for products used in the manufacturing phase
Games, toys and hobbies-label	No	limited	yes	Yes	smaller part (components)	no standard methodology	Very heterogeneous	partly in favour (toys)	high	Little impact but high consumer sensitivity; however existing impact already regulated by safety legislation
Games, toys and hobbies-ecodesign	No	limited	yes	Yes (Dir 2009/48)	smaller part (components)	no standard methodology	Very heterogeneous	partly in favour (toys)	high	Little impact but high consumer sensitivity; however; existing impact is already regulated by safety legislation
Jewellery, clocks and watches-label	Limited	limited	No	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	no good cost-benefit relation of mandatory label. In this product group, consumer choice is highly determined by design and lifestyle aspects and there is no

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
										public awareness for environmental issues. Therefore the impact of a label on purchase decision would likely be limited. A. ; voluntary label makes more sense
Jewellery, clocks and watches-ecodesign	limited	limited	No	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	Improvement would bring noticeable benefits (human- and eco-toxicity) mostly to society (less so to individual consumers) and mostly in third countries (mining and processing of gemstones / precious metals). Impact on cost unclear. Important verification issues.
Equipment for sport, camping and open-air recreation-label	No	limited	No	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	No known relevant impacts
Equipment for sport, camping and open-air recreation-ecodesign	No	limited	No	No	smaller part (components)	no standard methodology	Very heterogeneous	mostly critical	high	No known relevant impacts
Water transport-label	yes	No	No	No	Yes	no standard methodology	meaningful scope can be defined	mostly critical	high	Commercial ships are not purchased by private end consumers, therefore a simplified tool like the label would be of little use. The purchase of pleasure and sporting boats is generally determined by functional and lifestyle

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
										considerations and there is no public awareness of environmental issues, therefore a label would probably little or not affect purchasing decision
Water transport-ecodesign	yes	No	No	No	Yes	no standard methodology	meaningful scope can be defined	mostly critical	high	Ships are quite specific and not sold in great numbers; therefore probably not efficient tool.
Rail transport-label	yes	No	No	No	Yes	no standard methodology	meaningful scope can be defined	mostly critical	high	Railway equipment is not purchased by private end consumers, therefore a simplified tool like the label would be of little use. and would probably not affect purchasing decision
Rail transport-ecodesign	yes	No	No	No	Yes	no standard methodology	meaningful scope can be defined	mostly critical	high	For all motorized means of transport: High impact, especially in use phase, high benefits to expect mainly for society (less so individual users); experience exists be-cause problem structure similar to EuP. However, rail-way stock are quite specific and not sold in great numbers; therefore probably not efficient tool.
Air transport-label	yes	No	No	No	Yes	no standard methodology	meaningful scope can be defined	mostly critical	high	Aviation equipment is not purchased by private end consumers, therefore a simplified tool like the label would be of little use. and would probably not affect pur-chasing deci-sion

	Necessity				Feasibility					Value added
	Environmental impact	**Improvement potential by design?**	**Sold volume**	**Existing / more suitable legislation?**	**Impact measurable on product**	**Methodology**	**Scope product group**	**Stakeholder attitude**	**Regulatory burden**	**Cost-benefit**
Air transport-ecodesign	yes	No	No	No	Yes	no standard methodology	meaningful scope can be defined	mostly critical	high	No application
Non-motorized road transport-label	No	limited (processing stage)	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	No relevant impact
Non-motorized road transport-ecodesign	No	limited (processing stage)	yes	No	smaller part (components)	no standard methodology	meaningful scope can be defined	mostly critical	high	No relevant impact

Table 5: Scoring based on necessity, feasibility, and added value

	Necessity						Feasibility							Value added	Grand total
	Env impact	Improvement potential	Sold volume	Existing / legislation?	Total	Weighted	Impact measurable on product	Methodology	Scope product group	Stakeholder attitude	Regulatory burden	Total	Weighted	Cost-benefit	
Motorized road transport-label	2	2	2	1	7	2	2	2	2	0	1	7	2	1	15
Motorized road transport-ecodesign	2	2	2	1	7	2	2	2	2	0	1	7	2	1	15
Furniture and furnishings-ecodesign	2	1	2	2	7	2	1	0	2	1	0	4	1	2	13
Furniture and furnishings-label	2	1	2	2	7	2	1	0	2	1	0	4	1	1	12
Household textiles-label	2	1	2	2	7	2	1	0	2	1	0	4	1	1	12
Household textiles-ecodesign	2	1	2	2	7	2	1	0	2	1	0	4	1	1	12
Carpets and other floor coverings-label	2	1	2	2	7	2	1	0	2	0	0	3	1	2	12

	Necessity						Feasibility							Value added	Grand total
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
Carpets and other floor coverings-ecodesign	2	1	2	2	7	2	1	0	2	0	0	3	1	2	12
Garments-label	2	1	2	2	7	2	1	0	1	1	0	3	1	1	11
Garments-ecodesign	2	1	2	2	7	2	1	0	1	1	0	3	1	1	11
Stationery and drawing materials-label	2	1	2	2	7	2	1	0	2	0	0	3	1	1	11
Stationery and drawing materials-ecodesign	2	1	2	2	7	2	1	0	2	0	0	3	1	1	11
Other articles of clothing and clothing accessories-label	2	1	2	2	7	2	1	0	1	1	0	3	1	1	11
Other articles of clothing and clothing accessories-ecodesign	2	1	2	2	7	2	1	0	1	1	0	3	1	1	11
Milk, cheese and eggs-	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10

	Necessity						Feasibility							Value added	Grand total
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
label[6]															
Milk, cheese and eggs- ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Meat – label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Meat – ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Bread and cereals – label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Bread and cereals - ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Fruit and Vegetables – label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Fruit and Vegetables - ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10

[6] General remark for food products: The possible feasibility of Ecodesign relates to the processes / machinery in the manufacturing phase, not the products themselves. The idea of labeling builds on the ideas of the JRC study on an Ecolabel for food and should be seen in this context.

	Necessity						Feasibility							Value added	Grand total
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
Mineral waters, soft drinks,fruit and vegetable juices-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Mineral waters, soft drinks,fruit and vegetable juices - ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Oils and fats-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Oils and fats-ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Coffee, tea and cocoa-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Coffee, tea and cocoa-ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Fish and seafood-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10

	Necessity						Feasibility							Value added	Grand total
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
Fish and seafood-ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Wine-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Wine-ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Sugar, jam, honey, chocolate and confectionery-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Sugar, jam, honey, chocolate and confectionery-ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Beer-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Beer-ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10

	Necessity						Feasibility							Value added	Grand total
	Env impact	Improvement potential	Sold volume	Existing / legislation?	Total	Weighted	Impact measurable on product	Methodology	Scope product group	Stakeholder attitude	Regulatory burden	Total	Weighted	Cost-benefit	
Spirits-label	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10
Spirits-ecodesign	2	1	2	1	6	2	1	0	2	0	0	3	1	1	10

Excluded Product groups (one category scored 0)															
	Env impact	Improvement potential	Sold volume	Existing / legislation?	Total	Weighted	Impact measurable on product	Methodology	Scope product group	Stakeholder attitude	Regulatory burden	Total	Weighted	Cost-benefit	
Non-durable household goods/Adhesive and Sealants-ecodesign	2	1	2	2	7	2	1	0	0	1	0	2	0	2	11
Non-durable household goods/Adhesive and sealants-label	2	1	2	2	7	2	1	0	0	1	0	2	0	1	10
Shoes and other footwear-ecodesign	2	1	2	2	7	2	1	0	1	0	0	2	0	1	10

Excluded Product groups (one category scored 0)															
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
Shoes and other footwear-label	2	1	2	2	7	2	1	0	1	0	0	2	0	1	10
Glassware, tableware and household utensils-label	2	1	2	2	7	2	1	0	2	0	0	3	1	0	10
Glassware, tableware and household utensils-ecodesign	2	1	2	2	7	2	1	0	2	0	0	3	1	0	10
Other appliances, articles and products for personal care - ecodesign	2	1	2	2	7	2	1	0	0	0	0	1	0	2	10
Other appliances, articles and products for personal care-label	2	1	2	2	7	2	1	0	0	0	0	1	0	1	9
Materials for the maintenance and repair of the dwelling -ecodesign	2	1	2	1	6	2	1	0	0	0	0	1	0	2	9
Materials for the maintenance and repair of the dwelling	2	1	2	2	7	2	1	0	0	0	0	1	0	0	8

Excluded Product groups (one category scored 0)															
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
- label															
Newspapers and periodicals-label	0	1	2	2	5	1	1	0	2	0	0	3	1	0	8
Newspapers and periodicals-ecodesign	0	1	2	2	5	1	1	0	2	0	0	3	1	0	8
Miscellaneous printed matter-label	0	1	2	2	5	2	1	0	2	0	0	3	1	0	8
Miscellaneous printed matter-ecodesign	0	1	2	2	5	2	1	0	2	0	0	3	1	0	8
Tobacco-ecodesign	2	1	2	0	4	1	1	0	2	0	0	3	1	0	8
Food products n.e.c.-label	2	1	2	1	6	2	1	0	0	0	0	1	0	1	8

Excluded Product groups (one category scored 0)															
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
Food products n.e.c.-ecodesign	2	1	2	1	6	2	1	0	0	0	0	1	0	1	8
Non-motorized road transport-label	0	1	2	2	5	1	1	0	2	0	0	3	1	0	8
Non-motorized road transport-ecodesign	0	1	2	2	5	1	1	0	2	0	0	3	1	0	8
Pets and related products-label	2	1	2	1	6	2	1	0	0	0	0	1	0	1	8
Pets and related products-ecodesign	2	1	2	1	6	2	1	0	0	0	0	1	0	0	7
Therapeutic appliances and equipment-label	1	1	2	2	7	2	1	0	0	0	0	1	0	0	7
Therapeutic appliances and equipment-ecodesign	1	1	2	2	7	2	1	0	0	0	0	1	0	0	7

Excluded Product groups (one category scored 0)															
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
Water transport-ecodesign	0	0	0	2	2	0	2	0	2	0	0	4	1	1	7
Rail transport-ecodesign	0	0	0	2	2	0	2	0	2	0	0	4	1	1	7
Small tools and miscellaneous accessories-label	0	1	2	2	5	1	1	0	0	0	0	1	0	0	6
Small tools and miscellaneous accessories-ecodesign	0	1	2	2	5	1	1	0	0	0	0	1	0	0	6
Games, toys and hobbies-ecodesign	0	1	2	0	3	0	1	0	0	1	0	2	0	1	6
Water transport-label	0	0	0	2	2	0	2	0	2	0	0	4	1	0	6
Rail transport-label	0	0	0	2	2	0	2	0	2	0	0	4	1	0	6

Excluded Product groups (one category scored 0)															
	Env imp act	Improv ement potenti al	Sol d vol um e	Existi ng / legisl ation ?	To tal	Weig hted	Impact measur able on produc t	Metho dology	Scope product group	Stake holder attitu de	Regul atory burde n	To tal	Weig hted	Cost-benefit	
Air transport-label	0	0	0	2	2	0	2	0	2	0	0	4	1	0	6
Air transport-ecodesign	0	0	0	2	2	0	2	0	2	0	0	4	1	0	6
Jewellery, clocks and watches-ecodesign	1	1	0	2	4	0	1	0	0	0	0	1	0	1	6
Jewellery, clocks and watches-label	1	1	0	2	4	0	1	0	0	0	0	1	0	0	5
Equipment for sport, camping and open-air recreation-label	0	1	0	2	3	0	1	0	0	0	0	1	0	0	4
Equipment for sport, camping and open-air recreation-ecodesign	0	1	0	2	3	0	1	0	0	0	0	1	0	0	4

Although necessity based on environmental impact and improvement potential exists for several product groups these impacts are sometimes covered by existing legislation. Low feasibility presents itself as an issue mainly due to the prevalence of impacts not measurable on the products and the inexistence of methodologies to quantify them.

5 Assessment of scope expansion (non-ErP) – ELD[7]

Necessity on the basis of environmental impact and improvement potential has been identified for a number of product groups, particularly for food and drink products, private transportation and housing (see above section 4).

With regard to **feasibility**, possible methodologies for the labelling of the environmental impact of non-ErPs include the Product Carbon Footprint (PCF) and the Product Environmental Footprint PEF.

Labelling of the Product Carbon Footprint (PCF)

The term 'carbon footprint' has become tremendously popular over the last few years. A variety of different CO_2 or climate protection labels partly tailored to certain product groups is meanwhile available at the international level – e.g. Carbon Reduction Label/UK; Carrefour Initiative (France), Stop Climate Change Label/Germany; KRAV Climate Marking Sweden (KRAV Sweden); Climatop-Migros Switzerland, Carbon Label Initiatives or programs in Japan (Japan Environmental Management Association for Industry), Korea (Korea Eco-Products Institute), Thailand (Thailand Greenhouse Gas Management Organization). Interestingly, the main focus lies on foods although individual foods are clearly less relevant to the climate than other product groups, i.e. household appliances or automobiles.

With climate change high up on the political and corporate agenda, carbon footprint calculations are in strong demand. Nevertheless the focus on CO_2-emissions does not only provide possibilities, but also bears some risks that might as well weaken environmental labelling approaches in the future. In a study conducted on behalf of ANEC, the European consumer voice in standardisation, Oeko-Institut has recently analysed *Requirements on Consumer Information about Product Carbon Footprint*[8]*.* The conclusions we drew in this study are, in our opinion, still valid and are presented below:

Other environmental effects should not be disregarded

The narrow approach to only focus on greenhouse gas emissions bears the risk to overlook other relevant environmental impacts or even lead to wrong conclusions that increase negative environmental effects in the worse case. Therefore screening analyses of other environmental impacts must be included in a PCF.

[7] Identical to the text in the First Findings and Recommendations report

[8] See: http://www.anec.eu/attachments/anec-r&t-2010-env-001final.pdf

Drawing up of Product Category Rules for particularly relevant products is essential

The main challenge of PCF meant for communication is to define the whole framework in a way that all products belonging to one product group can be calculated as accurately as possible to assure the same approach even if the studies are performed by different experts. This requires e.g. the same goals, the same system boundaries, the same calculation rules and similar data quality for different studies. It is essential for the future that product category rules (PCRs) will be developed that ensure a comparable proceeding within one product group. Such PCRs would have to be defined and adopted at the European level.

It is currently not possible to perform product comparisons of multiple products based on PCFs carried out on behalf of different clients and by different practitioners, or public comparison with competing products in ways that are acceptable under competition law (e.g. through reporting of CO_{2e} values or use of CO_{2e} labels).

CO_2 labels would have to take into account consumer comprehensibility, benchmarks and indication of excellence

In order to be useful to consumers a CO_2 label would have to

> be comprehensible, e.g. by a well structured display, aggregation of the information, concentration on the gist. Additionally, they would have to have a standardised look thus enabling consumers to quickly comprehend the information, compare different products and include the information on the climate impact in their purchasing decision.

> include a rating scheme, enabling consumers to recognise if the products' Carbon Footprint represents a relatively low greenhouse gas emission for the respective product group or a relatively high emission. It must be possible for consumers to recognise excellent products. Only then an effective reduction of the climate impact due to "the right" purchasing decision can be achieved. Consumers are already well acquainted with the A-G labelling scheme of the EU energy label, so this could be a promising starting point.

> be third party certified. As credibility is of high importance for consumers, it is crucial that a third party review should be requested for the PCF when used in product-related communication.

> be backed-up by easy to access and transparent documentation of the PCF study the label is based on. This includes the motivation for calculating a PCF and assumptions and quantifiers used in the calculations. Any publication of the data must be clear, understandable, conclusive and open to scrutiny. It should be noted to what extent PCF calculations are reliable and/or uncertain and whether other important environmental impacts have been taken into consideration.

Single number CO_2 labels make no sense

A static PCF stand-alone label providing a total CO_2 footprint on products does not make sense and is not very relevant for consumer decision making. Although consumers are increasingly aware of the relevance of climate impacts resulting from their purchasing behaviour and usage of products, the display of a total CO_{2e} footprint figure alone would not be of much help to them. It has to be stressed that a figure of this kind suggests a precision and conclusiveness which cannot be achieved using the current state of methodology. At the current state with only few products being labelled this even bears the risk that the sheer display of such a label makes consumers believe that the product might be better than another one without a label.

To conclude, labelling the Product Carbon Footprint is currently of little value to consumers because it disregards other environmental impacts, cannot be easily interpreted without some benchmark or comparative frame, and lacks harmonized methodology (PCRs) that would allow a comparison across products. Once the methodological problems are solved and if the PCF is presented within a comparative frame (e.g. a scale), it can be helpful tool for consumer information. It should be clearly communicated though that it is not a comprehensive environmental label and does not indicate, by its presence alone, that a product in environmentally superior or inferior to another.

Labelling of the Product Environmental Footprint (PEF)

Basing the labelling on the Product Environmental Footprint (PEF) would be another possible step which, unlike the PCF, would include other environmental impacts.

In its conclusion on the „Sustainable materials management and sustainable production and consumption" (December 2010), the European Council invited the Commission to „develop a common methodology on the quantitative assessment of environmental impacts of products, throughout their life-cycle, in order to support the assessment and labelling of products".[9]

On this basis, DG Environment together with the European Commission's Joint Research Centre (JRC IES) and other Commission services developed the environmental footprint methodology which is recommended to be used by Member States, companies, private organisations and the financial community.

According to DG Environment[10], a three-year testing period (EF European pilot phase) was launched with the following objectives:

- to set up and validate the process of the development of product group-specific rules in case of products (Product Environmental Footprint Category Rules – PEFCRs), including the development of performance benchmarks
- to test different compliance and verification systems, in order to set up and validate proportionate, effective and efficient compliance and verification systems
- to test different business-to-business and business-to-consumer communication vehicles for Product Environmental Footprint information in collaboration with stakeholders (individual companies, industrial associations or any other private, non-governmental or public organisation both from the EU and outside of the EU).

The PEFCRs resulting from the EF pilot phase will become the product rules valid under the PEF, to be used by all stakeholders in the sector in the EU or internationally who decide to measure the performance of their products based on PEF.

A second wave of pilots will be launched in the end of 2013 or early 2014 addressing food/feed/drink products.

[9] Source: http://www.pef-world-forum.org/eu-environmental-footprinting/

[10] Source: http://ec.europa.eu/environment/eussd/smgp/product_footprint.htm

The **added value** of a label which includes other environmental impacts other than energy (and resources) use in the use-phase is not consensual. Although it is clear that consumer choice can be influenced by the environmental performance of the product they are buying, uncertainty remains as to best way to convey this information in an effective and influential way (see discussion of the PCF and PEF above). We consider the use of other policy instruments that tackle the impacts directly, as better options at this time, while efforts to further consolidate available information on the true impact of including additional environmental information, and in what form, on a label should continue. Once the PCF and PEF are more mature, after extensive consumer testing, and with the caveats listed above, they could be used for labelling purposes. However, it does not seem conclusive to us that integrating them into the framework of the Energy Labeling Directive would bring added value instead of complicating things. Furthermore, there is still untapped potential within the current product scope of the ELD:

First, the focus of the ELD's implementation has been kept on domestic products (direct to consumer) and there are no plans to develop labelling requirements for a range of product groups for which Ecodesign requirements were being produced, including almost all non-domestic equipment including (e.g. Motor systems, Commercial refrigeration, Transformers, etc.). The only exception being the labelling of lamps, where the new regulation 847/2012 has specific provisions on where and how to indicate the label classes of business-to-business lamps. Business-to business products are therefore an important area of untapped potential, one example being lifts (elevators) which already have a methodology for labelling in place in Germany (VDI 4707) and an ISO standard for measuring and classifying of lifts being developed (ISO 25747) that is in the final stages of publication.

Second, including information on best-practices for sustainable product use, either in the product information or in a label on the product itself, can positively influence user-behaviour which has a significant impact on the environmental performance of some products. One example is clothing where small behavioural changes such as reducing washing temperature, washing at full load, avoiding tumble-drying whenever possible, purchasing eco-friendly fibres, and donating clothes not used anymore can be achieved by improving user awareness to this issues.

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6 Assessment of Scope Expansion (non-ErP) - ED[11]

Similarly to what has been said above for the ELD, the scope expansion for the ED should be discussed around the issues of necessity, feasibility and added value.

Although the Ecodesign Directive already addresses impacts for the entire product lifecycle it currently only covers energy related products. The **necessity** for regulation of non ErP presents itself due the existence of relevant environmental impacts and improvement potential of these products that has been identified by previous studies (e.g. IPTS 2006).
However, it remains unclear if it is **feasible** to tackle these environmental impacts through the ED. Because product groups are very heterogeneous, it is difficult to develop and apply a common methodology that adequately covers different product specificities similarly to what is done now for ErPs with the MEErP methodology. Additionally, due to the nature of the current scope of products covered, the MEErP methodology focuses mainly on technological aspects of the product itself, which in the case of non-ErPs are often not the cause for environmental impact or the basis for improvement (rather, impacts occur at the stage of resource extraction as side-effects of mining or agriculture, or at the end-of-life stage due to insufficient recycling and disposal practices). These impacts would have to be assessed by dealing with, for example, resource efficiency in more detail.

Currently, a limited number of material options is available in the EcoReport. For ErPs, this does not negatively impact the validity of the overall results of the assessment since the use-phase has by far the highest contribution to the environmental impact. This is not the case for non ErPs where the production phase is often the highest contributor to the environmental impact of the product. Although the option exists to manually introduce extra materials into the database, available Life Cycle Inventory (LCI) information on materials is scarce. Current LCAs tend to systematically underestimate impacts that occur at the resource extraction stage (mining) or at the end of life stage (such as land use, pollution to air, soil, and water and health hazards to workers, caused e.g. by using acids to win the raw materials, or by burning of waste in Third World countries). LCAs tend to either cut off the end of life stage or assume that recycling takes place while, in fact, the products are not recycled or not well recycled. The reason is generally a lack of data, or of suitable indicators. Other impacts that tend to be not properly reflected in LCAs are impacts on biodiversity, land use, or depletion of biotic resources. This would, for example, concern wood or paper products. This lack of information makes it difficult to estimate the real environmental impact from the material content of a product.

[11] Identical to the text in the First Findings and Recommendations report, except for the 5th and 6th paragraphs

The EcoReport tool also does not take into account transportation issues specific to different product groups. The regional origin of the raw material should also be taken into account in EcoReport as some products are included in a global supply chain. These challenges are beginning to be tackled in current project such as JRC and Bio IS studies (Ardente et al. 2011, Ardente / Mathieux 2012, Bio IS 2013) but are still far from being resolved.
In addition to methodological issues, there is the issue of the most appropriate instrument. Although measures could be implemented through the Ecodesign Directive, in some cases other existing instruments are better suited to tackle the environmental impacts of non-ErP which target these impacts directly and have fully developed and proven methodologies (e.g REACH, Regulation 1107/2009 on plant protection products, regulation on pesticide residues, IED Directive).

For example, for food products, policies, standards and legislation related to certain life cycle stages include:

- Raw materials: the common EU agriculture policy, the water framework policy, the soil thematic strategy, the European Action Plan for organic food and farming, the biodiversity Action Plan for agriculture; the thematic strategy on the sustainable use of pesticides; the regulation on pesticide residues and the nitrates Directive;
- Manufacture / plant processes: the IPPC Directive; the Environmental Technologies Action Plan;
- Distribution: the Directive on packaging and packaging waste; Euro standards for light-duty road vehicles and high-duty vehicles; EuP Directive for cold storage;
- Use: the health claim Directive;
- End-of-life: the landfill Directive; the Green Paper on the management of bio-waste in the EU.

For each product where other legislation exists, the added value of treating them (additionally) under Ecodesign would have to be carefully evaluated, considering aspects such as the following:

- If products are already covered elsewhere, it would seem efficient to continue to deal with them coherently under that existing single framework.
- If environmental impacts are covered by horizontal regulations (e.g. RoHs, REACH, Water Framework Policy), uncertainty remains to the advantages of developing individual requirements for each product. Although a vertical approach could be slightly more effective due to the differences between product groups, which can lead to different levels of impacts, it might also involve analysis of possible improvements –through in-depth product specific analysis-, development of new methodologies and verification procedures for each individual product group..This problem would be much more salient than in the current scope because non ErP are more heterogeneous.

Our current conclusion is that the significant extra costs for carrying out such a product-specific analysis would probably outweigh the added value of a vertical approach.

Additionally, since for most of non-ErPs the impact is not measurable on the product itself, conformity with any Ecodesign Directive requirements would have to rely on the provision of information by suppliers to ensure that products comply with set specifications. The information (and certification) requirements would have to be based on environmental impact analysis and assessment, continuous

measurement, targets, and monitoring procedures for each step in the supply chain. The producers or importers of these products would need to be able to certify that the inputs used in their products have been produced by their supplier in certain ways so that the final product meets the minimum requirements set while ensuring traceability, possibly through chain of custody certification schemes.

For this purpose, for each process within the supply chain, all inputs, outputs, byproducts, and resources would have to be identified, as well as production methods and an environmental performance measurement system would have to be developed for each process. Given the complexity of most supply chains, a methodology for calculating the composite performance of the entire supply chain would also have to be developed.

In the case of specific minimum requirements producers may also need to know the values of the relevant environmental impact indicators. Thus, unless there is direct control of the upstream production stages, it would require producing and exchanging more environmental information across the operators in the supply chain which would lead to increased bureaucratic burden. It would also require the use of declaration or certification programs and monitoring schemes to ensure that all parts of the supply chain are compliant to the set requirements. This would be particularly difficult for some products which have global supply chains. Therefore, market surveillance on such requirements would probably require considerable resources to be effective with a higher risk of non-compliance in comparison to current Ecodesign Directive requirements based on product testing. Market surveillance authorities are not experienced in this type of monitoring. This is also the reason why most existing schemes of this type (such as fair trade, sustainable palm oil, sustainable cotton etc.) are voluntary and are conducted by scheme owners that are specialized on the product or sector, passing the price premium for the monitoring efforts on to the consumer. There are only a few examples of mandatory schemes such as the Timber Regulation and the sustainability requirement for biofuels. The latter, however, relies on existing voluntary schemes for monitoring compliance, too). Furthermore, most schemes and definitely all mandatory ones relate to primary products where the supply chain is relatively easy to monitor as compared to complex industrial products.

Therefore, we conclude that the monitoring and verification process would in most cases be too complicated and too different from current Ecodesign practice to include it in the ED. However, the experience on compliance systems gained through the ongoing PEF project (see previous section) should be monitored and taken into account.

This does however not preclude other specialized product-specific policies (such as the Timber Regulation) from being developed. However, it casts doubt on the **added value** of using the Ecodesign Framework for this purpose. Product-specific frameworks may be in a better position for developing the complex institutional setup needed for this kind of monitoring.

7 Assessment of scope expansion to transport – ELD and ED[12]

General issues

The case study for trucks shows there is an identified large potential for improvement of the environmental performance, with reasonable payback times.

Both labelling and minimum performance requirements have been identified as possible policy options to improve the environmental performance of these vehicles. They have been implemented in other economies (e.g. Japan, USA). Because these are energy using products, the implementation of such policies could be done through the Energy Labelling Directive and the Ecodesign Directive or, alternatively, through another policy instrument as has been done with passenger cars.
However, most important environmental impacts in the road transportation sector (including light vehicles) are already covered by existing legislation[13], Passenger cars already have reusability, recyclability and recoverability requirements set by Directive 2009/1/EC and Directive 2000/53/EC on end-of life vehicles. The pollutant emissions from road vehicles (CO, THC, NMHC, NOx, HC+NOx, PM) are regulated separately for light-duty vehicles (cars and light vans) and for heavy-duty vehicles (trucks and buses). For light-duty vehicles, the emission standard currently in force is Euro 4, as defined by Directive 98/70/EC which is one of the Directives amending Directive 70/220/EEC. Following the CAFE programme and the resulting Thematic Strategy on air pollution, new Euro 5 and Euro 6 standards have already been agreed by Council and Parliament). The legislation currently in force for heavy-duty vehicles is Directive 2005/55/EC (agreed in co-decision) and Directive 2005/78/EC (implementing provisions).

Therefore, the burden of including these issues in the scope of ELD and ED is probably greater than its added value. The environmental added value would be limited to aspects not currently covered, to avoid overlap or repetition, which seem to have a small improvement potential. Existing regulation could be completely integrated or absorbed by the ED or the ELD, which would have the advantage of having everything covered by a single regulatory framework, but it would entail extra-cost in preparatory work, studies, preparing information for manufacturers and consumers, and possible changes to existing structures. This would also mean an extra burden to manufacturers which would have to readjust current practices, which are well accepted, to the new regulatory framework. Furthermore, for the inclusion of Trucks (or other road transportation vehicle) in the Ecodesign Directive some changes would have to be made to the MEErP Methodology to take into account the

[12] Identical to the text in the First Findings and Recommendations report
[13] See Case-Study: Trucks

existing differences between these products and the products already covered, particularly in the EcoReport tool (e.g. vehicle energy use is calculated by kilometre covered instead of hours of use).

Electric bicycles are a group that is not yet extensively regulated. However, their environmental impact is very small when compared to other means of transportation and its use is clearly beneficial when compared to other products that fulfil the same function. For comparison, while an electric bicycle consumes energy and releases emissions to manufacture and operate, the amount is the same order of magnitude as a human's breathing activities during a brisk walk[14]. Another concern would be the lead content of the batteries used in electric bicycles but this is tackled by the Battery Directive (2006/66/EC). Therefore, the introduction of ecodesign or labelling requirements for these products would be an unnecessary burden to producers with very little improvements achievable.

The stakeholder consultation and literature review have not produced evidence pointing to the need of setting individual ecodesign or energy labelling requirements on transport product groups such as trains, boats, airplanes.

Labeling

An EU harmonised comparative label for passenger cars would be very useful as a visual aid to increase consumer understanding of the existing information requirements under the CO_2 Labelling Directive[15], which is currently being revised. The numerical measure of grams of CO2 per km without a basis for comparison is difficult to interpret as anything other than a random number. The same is also true, but to a lesser extent, for the measure of fuel consumption. Furthermore, such a label would result in easier handling and lower cost for car manufacturers. Such a measure should not pose any major problems, as existing standards are in place and similar labels have been established in e.g. UK, Japan, Australia, etc. For example, the label in the UK has a similar design as the Energy label or the tyre label. Instead of using the ELD for this purpose, this label could be set under the existing information requirement which would reduce the administrative burden to both the Commission and manufacturers.

This has not been realized yet because Member States may wish to calculate ratings based on their national average fleet performance, which varies across Europe; or they may wish to link the bands to national tax systems based on CO2 emissions, which also vary across Europe.

A common label that took into account all transportation methods would be difficult to develop, even if it did not take into account life-cycle considerations for which some data would be difficult to obtain (e.g. production phase of airplanes or trains) and it remained focused on the use-phase. Such a label would include for example, trains(B), airplanes(B), bikes(A), cars (D). One of the difficulties is the large number of variables would have to be taken into account, the extent of which could be more or

[14] Shreya Dave, "Life Cycle Assessment of Transportation Options for Commuters" , Massachusetts Institute of Technology (MIT), February 2010

[15] http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31999L0094:EN:HTML

less limited depending on the methodology developed. One could for instance only consider the fuel consumption per passenger km, or go as far as considering the energy spent on the maintenance and conservation of infrastructures such as airports, roads, etc. or of the vehicles themselves. The additional consideration of environmental impacts such as emissions to air (CO_2, NO_x, SO_x, PM, VOCs), acidification, land use, noise would also increase the number of variables involved. Variability between products within each mode of transport would also have to be taken into account (not all cars have the same environmental performance nor all trains, etc.). In addition, the impact of such a label on consumer choice would have to be evaluated as other factors, such as travel time, comfort, etc. might be more important in the decision making process. Furthermore, consumers are not used to labels that apply across different products, as would be this case, and therefore uncertainty exists as to how they would understand it if at all. Confusion might also be increased by the introduction of such a label, e.g. how it would be understood against the existing CO2 car labelling scheme,.

Minimum requirements

Requirements for GHG emissions do currently exist. However, they relate to fleet performance and not to the performance of a specific model. To set requirements for specific models, categories would have to be developed according to vehicle characteristics and use.

It is important to notice that the auxiliary equipment of vehicles (e.g. air conditioning, lighting, ventilators), which are a growing load in modern vehicles, are not taken into account in existing testing procedures. This equipment can have a significant impact on the fuel consumption and emissions of the vehicle and, therefore, should be addressed, by including them in the duty cycle.

8 Conclusions for Scope Extension[16]

General issues

- Suitability should be evaluated based on three main issues: necessity, feasibility and added value.
- Significant environmental impact and improvement potential has already been identified by previous studies for some product groups.
- Most of the identified improvement options relate to production practices that cannot be verified in the final product and cannot easily be included in a ranking of environmental impacts. Other instruments based on best-practices regulation might be more effective. These include certification schemes (e.g. organic food products) and horizontal measures such as the IED Directive or the European Action Plan for Organic Food and Farming.
- For impacts that cannot be verified on the product itself, methodologies for certification covering the entire supply chain would have to be developed. Some product groups (e.g. garments) have very long supply chains covering different non-EU countries which would make it difficult to develop such methodologies. Furthermore, market surveillance on such requirements would probably require considerable resources to be effective with a higher risk of non-compliance in comparison to current Ecodesign Directive requirements based on product testing. However, the experience gained through the ongoing PEF project should be taken into account.
- Allocation of efforts on market surveillance of the existing regulated products would probably be more valuable.
- The use of electric bicycles is clearly beneficial when compared to other products that fulfil the same function and, therefore, the introduction of ecodesign or labelling requirements for these products would be an unnecessary burden to producers with very little improvements achievable.

Energy Labelling Directive

- There is still untapped potential for savings from labelling of ErPs within the current scope, such as the labelling of B2B products. One example are lifts (elevators) which already have a methodology for labelling in place in Germany (VDI 4707) and an ISO standard for measuring and classifying of lifts being developed (ISO 25747) that is in the final stages of publication.
- Labelling schemes based on production best-practices and supply chain certification have, so far, been of voluntary nature due to the huge burden they impose on manufacturers and market surveillance authorities.
- Because much of the impact of non-ErPs are not related to energy consumption the possibility of labelling other impacts, aggregated into an index (e.g. carbon footprint, environmental

[16] Identical to the text in the First Findings and Recommendations report

footprint, water footprint, etc.) would have to be evaluated. However, an aggregated index can also means a loss of information and it is difficult to establish transparency and consumer trust. If methodology and communication issues are solved, such an index could be a consumer information tool, but the added value of introducing it under the Energy Labeling Framework is doubtful.

- For means of motorized transportation by road, because they are energy using products and because there are already standardized methodologies for measuring GHG emissions, fuel consumption and other emissions to air, which are already part of the information requirements for passenger cars, the introduction of an energy label or environmental label would not present itself as a major burden. However, the option of doing so through the already implemented legal framework (Emissions and CO2 Regulations) presents itself as a better option.
- A single label for all transport modes would be difficult to develop due to the large amount of variables to consider and its impact would have to be evaluated particularly in what regards consumer understanding.
- The stakeholder consultation and literature review have not produced evidence pointing to the need of setting individual ecodesign or energy labelling requirements on transport product groups such as trains, boats, airplanes.

Ecodesign Directive

- There is still untapped potential for savings from setting ecodesign requirements to ErPs, as identified in the Ecodesign Working Plan (2012-2014), particularly relating to impacts in other phases than the use-phase (e.g. mobile phones).
- Although measures could be implemented through the Ecodesign Directive, in some cases other existing instruments are better suited to tackle the environmental impacts of non-ErP which target these impacts directly and have fully developed and proven methodologies (e.g REACH, Regulation 1107/2009 on plant protection products, regulation on pesticide residues). For example, since some products are already covered elsewhere, it would seem reasonable to continue to deal with them coherently under that existing single framework. Furthermore, since other impacts are covered by horizontal regulations (e.g. RoHs, REACH, Water Framework Policy), uncertainty remains to the advantages of developing individual requirements for each product.
- Due to the nature of the current scope of products covered, the MEErP methodology focuses mainly on technological aspects of the product itself, which in the case of non-ErPs are often not the cause for environmental impact or the basis for improvement but, for example, more relevance should be given to the way they are produced.. Furthermore, it also does not address other aspects such as toxicity, land-use, impact on biodiversity, or depletion of biotic resources.
- For ErPs, the limited number of material options available in the EcoReport tool does not negatively impact the validity of the overall results of the assessment since the use-phase has by far the highest contribution to the environmental impact. This is not the case for non ErPs where the production phase is sometimes the highest contributor to the environmental

impact of the product. Although the option exists to manually introduce extra materials into the database, available LCI information on materials is scarce: Current LCAs tend to systematically underestimate impacts that (a) occur at the resource extraction stage (mining) and (b) end of life stage (e.g. land use, pollution to air, soil, and water and health hazards to worker). Particularly, the recycling rate of products is most often overestimated, as a simplifying assumption, and in reality products are not well recycled (or not at all). This lack of information makes it difficult to estimate the real environmental impact from the material content of a product.

- The EcoReport tool also does not take into account transportation issues specific to different product groups.
- The regional origin of the raw material should also be taken into account in EcoReport as some products are included in a global supply chain.
- Substantial resources would have to be allocated to the updating of the methodology for applicability to non-ErPs. The projects that have recently been finished have not yet been able to thoroughly solve the issues.
- To set minimum performance requirements for specific car models, further categories would have to be developed according to vehicle characteristics and use.

On the basis of the preconditions set out (necessity, feasibility and added value) it seems premature to expand the scope of the Directives particularly if limited resources are available.

Nevertheless, since conditions are constantly changing, and experience is gained through existing smaller scale schemes, the use of a decision tree such as the one developed and applied within Task 3 the study is recommended for the evaluation of future inclusion of product groups.

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