GENERAL PRINCIPLES FOR AN ENVIRONMENTAL COMMUNICATION ON MASS-MARKET PRODUCTS

PART 22: METHODOLOGY FOR THE ENVIRONMENTAL IMPACT ASSESSMENT OF KITCHEN ROLL

March 2016

Study conducted on behalf of ADEME by: *AFNOR Association Française de Normalisation*
Contract no.: 1477C0009

Technical coordination: *Edouard FOURDRIN* – **Division\Department:** Service Produits et Efficacité Matière

ADEME
Agence de l'Environnement et de la Maîtrise de l'Energie

FINAL REPORT

REPORT CITATION

2016. General principles for an environmental communication on mass-market products – Part 22: Methodology for the environmental impact assessment of kitchen roll. 29 p.

Any representation or reproduction of the contents herein, in whole or in part, without the consent of the author(s) or their assignees or successors, is illicit under the French Intellectual Property Code (article L 122-4) and constitutes an infringement of copyright subject to penal sanctions. Authorised copying (article 122-5) is restricted to copies or reproductions for private use by the copier alone, excluding collective or group use, and to short citations and analyses integrated into works of a critical, pedagogical or informational nature, subject to compliance with the stipulations of articles L 122-10 – L 122-12 incl. of the Intellectual Property Code as regards reproduction by reprographic means.

Contents

1. Functional unit 6
1.1. Product assessed 6
1.2. The functional unit employed for the kitchen roll category is the following: 6
1.3. The reference flow selected following the recommended functional unit is: 6
2. Main environmental impacts 7
3. Lifecycle inventory data at the source of the environmental impacts 7
4. Relevant impact indicators, degree of precision, and calculation methodology 7
4.1. Selected indicators 7
4.2. Indicators excluded 9
4.3. Additional information 9
5. Allocation rules for products and co-products 10
5.1. Production stage (manufacturing pulp) 10
5.2. Recycled pulp production stage: allocation of the environmental benefit of recycling paper 10
6. Conditions for taking into account end-of-life processes 11
7. Scope of assessment for the selected indicators 12
7.1. Description of the life cycle and outline of the system studied 12
7.2. Life cycle steps taken into account 13
7.3. Stages not accounted for in the life cycle analysis 14
8. Life cycle inventory data classification scheme 15
9. Situations for which additional data is a recommendation 21
10. Data validity over time and update frequency 21
11. Validation process for data and results 21
12. References 22
Annex A Criteria grid 23
List of organizations involved in the follow-up, drafting and/or making of this guide 26
List of organizations attending the validation of this guide (at the Environmental Communication platform meeting held 07 July 2014) 30

Preamble

This document was prepared by working group WG 4H “Hygiene” attached to the “environmental communication on mass-market products” platform coordinated by ADEME (Mrs. OUGIER/Mr. FOURDRIN) with the AFNOR secretary (Mr. BALCAEN).

WG 4H coordinator: Mrs POUILLAT (GROUP'HYGIÈNE)

WG 4H co-coordinator: Mr FOURDRIN (ADEME)

The list of organisations involved in the follow-up, drafting and/or making of this guide can be found at the end.

Scope

This guide is specifically dedicated to “kitchen roll” products.

The purpose of this guide is to simplify the calculation methodology to enable all businesses producing kitchen roll to be able to adopt and use the scheme for environmental communication on mass-market products.

1. Functional unit

1.1. Product assessed

Article made of “tissue” paper, generally retailed as a roll divided into perforated sheets or a stack or block of sheets, designed for general household use: cleaning around the home, wiping clean in the kitchen, personal use, and so on. It is readily usable ‘as is’ requiring no added water or detergent.

Kitchen roll is covered under CPA code 17.22.11 as part of the “Manufacture of household and sanitary goods and toilet requisites” sector (NACE code Rev 2 17.22). NACE code 17.22 also includes disposable nappies, toilet paper, tampons, and paper plates... making it far too vast in terms of product categories, applications, functional units and indicators to be collapsed into a single-standard guide.

1.2. The functional unit employed for the kitchen roll category is the following:

Its function is to absorb liquids and to mop up and clean away dirt. The product stands out by its ability to very quickly absorb a relatively large amount of water. Kitchen paper retains its function even in wet state thanks to its very high wet tensile strength obtained by a special manufacturing-process treatment. It is suitable for food contact and functionally compliant with public health and hygiene rules.

The functional unit employed for kitchen roll is “absorb 10 g of water” [1)].

What? Absorb liquids

How much? 10 g of water

How? By contact

How much time? Instantly

1.3. The reference flow selected following the recommended functional unit is:

The amount of kitchen roll paper tissue needed to absorb 10 g of water is calculated based on the mean water-absorption capacity determined according to ISO 12625-8.

Water-absorption capacity (expressed in grams of water per gram of product) is measured on the finished product and calculated as the representative mean of a series of mean water-absorption capacity measurements carried out on all the production runs completed over the last year (n-1) for the product reference under study. The measurements are carried out at the following frequency: at least 1 measurement per day per production run (*) throughout the production-run campaign period. This per-day measurement is the value calculated as the mean of all measurements carried out over the day under study and on the production run under study.

If a new product is developed or if the manufacturer does not have measured values for the previous year (n-1), then measurements shall be carried out at least once per day over the period of the production run under study, for at least 10 days after manufacturing conditions have stabilized.

(*) Manufacture of the finished product, which is understood to mean product on the market and intended for end-consumers.

1) This 10 g value is chosen as representative of common use of kitchen roll.

2. Main environmental impacts

The main environmental impacts for the kitchen rolls category are:

— Climate change

— Depletion of non-renewable natural resources

— Atmospheric acidification

3. Lifecycle inventory data at the source of the environmental impacts

The available studies ([GH], [KC], [DM], [PCRr], [PCRv]) as well as the European Ecolabel [EL] all conclude that the production phase plays an important role.

Environmental impacts	Data at the source of the impacts (in decreasing order of importance)
Climate change	Tissue production (energy consumptions) Pulp production (including vapour production) End-of-life of the kitchen roll towel Production of wet-strength additive Transport (pulp, paper)
Depletion of non-renewable natural resources	Tissue production (energy consumptions) Production of the film-wrap Pulp production (including steam production) Transport (pulp, paper)
Acidification	Pulp production (including steam production); black liquor combustion (virgin pulp) Tissue production, conversion (energy consumption) Transport (pulp, tissue) Production of the core

4. Relevant impact indicators, degree of precision, and calculation methodology

The environmental impacts identified above shall be characterized using the indicators set forth in the following table. This table indicates the unit of measurement, the degree of precision, and the calculation methodology for each impact indicator. The indicators shall be expressed using ratios of the units stated in the table to the functional units stated in clause 1 of the sector-specific annex herein.

4.1. Selected indicators

Environmental impacts	Impact indicators	Units used	Calculation methodologies[2]
Climate change	Greenhouse gas emissions	g CO_2 eq.	IPCC 2007 Approximation of the effects of global warming over time (100 years) of certain greenhouse gas emissions in the atmosphere when compared to carbon dioxide. Embodied GHG emissions are not considered.
Depletion of non-renewable natural	Abiotic depletion	g Sb eq.	CML 2002

[2] These characterization methods are given here for information only. The methods employed shall be conform to the general principles for an environmental communication on mass-market products (Part 0).

resources			
Acidification	Acid gas emissions	g SO_2 eq.	Recipe 2008

4.2. Indicators excluded

Tropospheric ozone production: For this indicator, the strong redundancy with the results of the greenhouse gas indicator ([KC], [DM]) explains why it has not been retained for the environmental assessment of kitchen roll.

Stratospheric ozone depletion. Negligible impact [KC].

Human toxicity. The main source is black liquor combustion, one of the main sources of SO_2 [KC]. This indicator is therefore linked to atmospheric acidification.

NOTE The potential ecotoxicity due to the wet-strength additive has been assessed based on the material safety data sheet and deemed negligible given the concentrations released at manufacture.

AOX emissions, which contribute to toxicity assessment, are therefore not taken into account.

Eutrophication. Eutrophication has not been selected as kitchen roll contributes very little to the mean per-capita environmental impacts [3] [GH].

Water consumption (this is a flow indicator, not an impact indicator). The primary source is pulp production, with a return to the natural environment on site. With regard to pulp production, net consumption is about 2 to 25 % of gross consumption [FEFCO]. With regard to tissue production, net consumption is about 20 to 30 % of gross consumption [GH]. Net water consumption has not been selected as kitchen roll contributes very little to the mean per-capita environmental impacts [GH] [4].

4.3. Additional information

Biodiversity

This information concerns products made from virgin fibre.

Sustainable forestry is only one of the elements that contribute to preserving the biodiversity of this environment. The vast majority of kitchen roll manufacturers comply with “good manufacturing practices” and use fibres from sustainably managed forests.

Moreover, starting on 3 March 2013, regulations ban using any timber or timber products that come from illegal harvesting (European Parliament and Council Regulation No. 995/2010).

However, since:

— on the one hand, there is no individual and generally recognized indicator to date that would make it possible to account for a product's impact on biodiversity;

— and on the other hand, there is no uniform traceability system for all forest products, this criterion has only been retained as additional information.

[3] Considering an average of 2 kg of kitchen roll per year per head of the population [KC], eutrophication tied to consumer use of kitchen roll is negligible compared to the 34 kg PO_4^{3-} equivalents emitted per person per year.

[4] Considering an average 2 kg of kitchen roll used per year per head of the population [KC], water consumption tied to consumer use of kitchen roll is negligible compared to the 559 m^3 consumed per person per year.

5. Allocation rules for products and co-products

5.1. Production stage (pulp manufacture)

If the pulp production plant has an energy surplus, an environmental credit will be granted, in the form of environmental impact avoided, which is fully allocated back to pulp manufacture.

5.2. Recycled pulp production stage: allocation of the environmental benefit of recycling paper

In France, recycled paper is for the most part recycled in a closed loop.

In order to account for the specificities of kitchen roll, and in accordance with the recommendations of the general principles for an environmental communication on mass-market products (Part 0)[5)], suitable modelling must therefore be proposed to account for the recycled portion of the raw materials.

The formula given under §B2.3.3 has been adapted by taking $R_{1x}=R_2=0=Ve$ for kitchen roll.

Integration of processing waste (from another production-system source):

Under the European Ecolabel framework, processed waste is ordinarily allocated an impact linked to tissue paper production. The means of calculating the impact of this waste is being validated by the certification bodies. The objective is to consider that all impacts originating at the plant and upstream are to be distributed amongst all the site's product references.

The conclusions after consulting the Ecolabel certification bodies may be taken into account if they are considered pertinent on this point.

In the meantime, it is recommended that the method chosen by the French certification body (AFNOR Certification) be followed by taking into account an impact equivalent to that of tissue paper production.

To maintain consistency, the conversion of waste (excluding converting broke re-integrated into the production system under study) streamed out for recycling in another production system is modelled by allocating all the benefits and impacts tied to recycling to kitchen roll manufacture.

5) General principles for an environmental communication on mass-market products (Part 0) Annex B.2.3.2: Closed-loop recycling with or without waste-to-energy recovery – sub-clause b) Allocation in nested closed loops.

6. Conditions for taking into account end-of-life processes

The scope of the environmental information is the use of kitchen roll distributed on the French market, and therefore kitchen roll plus packaging plus core end-of-life at waste disposal facilities, incineration or even recycling rates shall be modelled to be representative of the situation in France.

The precise environmental impact assessment of treating kitchen roll, cores and packaging after use includes:

— collection–recovery of the kitchen roll plus packaging and core (bins, vehicles, transport)

— the different processing-treatment modes (selective sorting and recycling, incineration, composting, methanization and storage at a residual waste disposal facility).

Within the framework of environmental information on kitchen roll, only the processing treatments are accounted for, as the impacts of collecting the kitchen roll plus packaging waste and core waste can be considered negligible (see clause 7.3 Stages not accounted for).

7. Scope of assessment for the selected indicators

7.1. Description of the life cycle and outline of the system studied

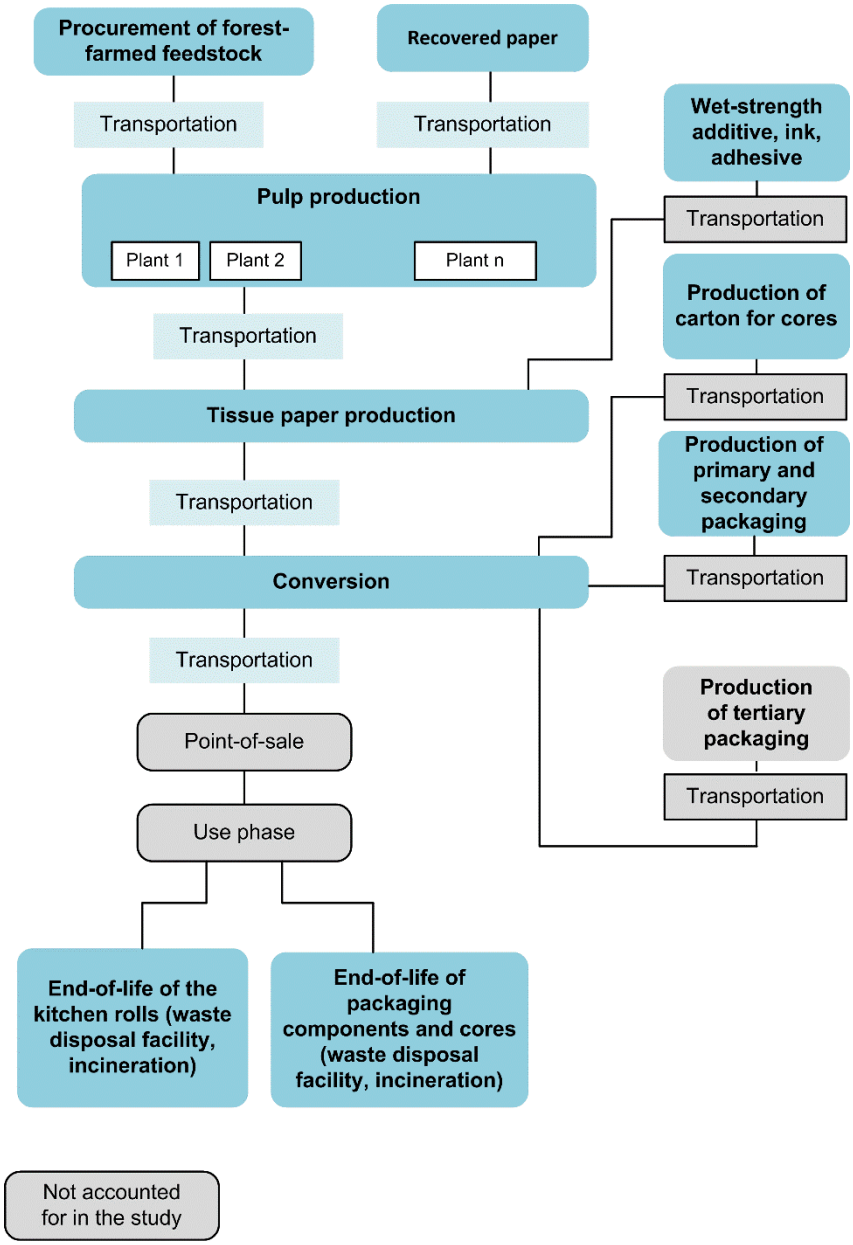

Figure 1 — Diagram of the kitchen roll life cycle

7.2. Life cycle steps taken into account

Significant stages in the process [PCR, GH]:

— pulp production (virgin pulp, deinked pulp, etc.)

— tissue production

— transportation (pulp, product)

— end-of-life of the kitchen roll

Secondary stages [PCR]:

— extraction of natural resources: forestry (e.g. thinning, saw mill residues, woodchip production, etc.)

— production of packaging and carton for cores

— production of the wet-strength additive, ink, adhesive

— end-of-life of packaging and cores [6)]

[6)] NOTE Discussions are underway on how to qualify the intended use of the core (as packaging or not). Depending on the conclusion reached, the representation of kitchen roll core end-of-life may ultimately change and integrate a proportion of recycling. The sector-specific guide will thus be adapted accordingly.

7.3. Stages not accounted for in the life cycle analysis

Stage not accounted for	Rationale for excluding the stage
Client's journey from their home to the point of sale	In agreement with environmental communication on mass-market products platform guidelines, this stage is set to be covered in a separate communication to end-users
Use phase of the kitchen roll	Zero contribution of the stage concerned to the environmental impacts studied
Shaping the packaging materials and the cores	Negligible contribution of the stage concerned to the environmental impacts studied [7)]
Production, transportation to the production plant, and end-of-life of tertiary packaging (pallets, pallet stretch wrap)	Negligible contribution of the stage concerned to the environmental impacts studied [8)]
Packaging of raw papermaking materials	Negligible contribution of the stage concerned to the environmental impacts studied (learned from experience; no calculation done)
The chemicals used to manufacture the paper (process additives, other additives and dyes in some cases)	Negligible contribution of the stage concerned to the environmental impacts studied [9)]
Utility energy consumption and waste production at logistics platforms and points-of-sale	These impacts may ultimately become integrated once a sector-specific distribution methodology has been defined (this aspect is extremely variable)
Collection of kitchen roll after use, packaging waste and carton cores	Negligible contribution of the stage concerned to the environmental impacts studied [10)], excluding wet-strength additive, ink and adhesive which are accounted for.
Construction of production-plant facilities and infrastructures	Negligible contribution of the stage concerned to the environmental impacts studied (learned from experience; no calculation done)
Construction of production-line facilities	Negligible contribution of the stage concerned to the environmental impacts studied (learned from experience; no calculation done)
Flows tied to R&D, to employee transport from home to work and back and out-of-office missions, and to product-related services such as advertising, canvassing and marketing	Real struggle to allocate these flows to the product

7) The materialization of these flows typically represents 10% of the impacts tied to materials and feedstock production, which itself represents around 10 %–20 % of total aggregate product impacts. The materialization of these inputs thus represents 1 %–2 % of total aggregate impacts [GH].

8) The production of tertiary packaging represents 0,2 % of total greenhouse gas emissions, 0,4% of total acid gas emissions and 0,9 % of resource depletion [GH]

9) A calculation based on the typical consumption of chemical inputs used to produce pulp and tissue paper shows that its contribution is less than 0,3 % of total greenhouse gas emissions, 0,8% of total acid gas emissions and 0,3 % of resource depletion [GH]. Note: the wet-strength additive, ink and adhesives, however, are accounted for.

10) This stage represents less than 0,2 % of total greenhouse gas emissions, less than 0,6 % of total acid gas emissions and less than 0,2 % of resource depletion [GH].

8. Life cycle inventory data classification scheme

		PCR						IMPACTS BASE		
		Primary data		Semi-specific data		Secondary data				
								Generic inventory data		
Stage	**Sub-stage**	**Activity-related data, to be linked to in-Base inventory data**	**Elementary flows and data without direct links to the Base**	**Activity-related data, to be linked to in-Base inventory data**	**Elementary flows and data without direct links to the Base**	**Activity-related data, to be linked to in-Base inventory data**	**Elementary flows and data without direct links to the Base**	**Processes**	**Technical representativeness**	**Geographical representativeness**
Raw materials	Composition of the kitchen roll product	Amount of paper feedstock used for kitchen roll manufacture: mass (g) per consumer sales unit (CSU)								
		Nature of product fibres: pulp composition The product's pulp composition may vary over the course of a year. Pulp composition is based on a yearly average of the plant's tissue fibre feedstock procurement, with a supplier mix taken into account (main suppliers) that represents at least 80 % of the annual procurements and for which primary data is required. The remaining 20 % is to be covered by secondary data (see below).								
	Forestry products (for each pulp producer counted among the main suppliers)	Nature of pulp fibres: – % recycled – % virgin (long fibres, short fibres)		Amount of fibrous raw materials used (recovered paper or virgin raw materials): tonne/t air-dried pulp, separated into long and short fibres Default values: Recycled fibres: 1.5 Long fibres: 2.0 Short fibres: 2.0				Production of forestry products designed for papermaking	– Production of forestry products (short fibres) – Production of forestry products (long fibres)	Worldwide
	Primary and secondary packaging	Mass and nature of CSU protective film (g/CSU) (100 % virgin film) Mass and nature of CSU packing film (g/CSU) (100 % virgin film) Natural-resource mass of CSU groupage carton (g/CSU)						Production of primary and secondary packaging materials (production of forestry raw materials, corrugated board, plastics (polyethylene, polypropylene, etc.))		Worldwide
	Core	– Number of rolls per CSU – Mass of the core (g/core) – Choice of core type: 100 % virgin-pulp, 100 % recycled pulp, mixed-source core						Production of carton for cores (production of forestry raw materials, corrugated board)	- Production of 100 %-virgin carton - Production of 100 %-recycled carton	Worldwide

		PCR						IMPACTS BASE		
		Primary data		Semi-specific data		Secondary data				
								Generic inventory data		
Stage	**Sub-stage**	**Activity-related data, to be linked to in-Base inventory data**	**Elementary flows and data without direct links to the Base**	**Activity-related data, to be linked to in-Base inventory data**	**Elementary flows and data without direct links to the Base**	**Activity-related data, to be linked to in-Base inventory data**	**Elementary flows and data without direct links to the Base**	**Processes**	**Technical representativeness**	**Geographical representativeness**
Pulp manufacture	Main suppliers (representing, when totalled together, at least 80 % of tissue paper pulp feedstock procurement for tissue paper production) – for each pulp producer	Pulp type, including the type of bleaching process								
		Amount and nature of the energy consumed: natural gas, fuel oils, electricity (not produced on-plant through reported fuels) and other fuels (kWh LHV per tonne of air-dried pulp)						Production and distribution of the energy consumed (natural gas, fuel oils, electricity and other fuels)		National (electricity) Worldwide (natural gas, fuel oils, other fuels)
		Pulp plant location								
			NOx and S emissions to air (kg/t air-dried pulp)							
		The nature, amount (kg/t air-dried pulp) and ultimate fate of plant waste (e.g. de-inking sludge)						Disposal, incineration with and without paper waste-to-energy , landspreading paper mill sludge		Worldwide
		Amount and nature of energy sold (kWh/t air-dried pulp)						Production and distribution of the energy consumed (natural gas, fuel oils, electricity and other fuels)		National (electricity) Worldwide (natural gas, fuel oils, other fuels)
	Other suppliers (representing, when totalled together, no more than 20 % of tissue paper pulp feedstock procurement for tissue paper production) – for each pulp producer	Pulp type, including the type of bleaching process						Pulp production, including the chemicals used in the bleaching process plus any forestry products needed	– chemical pulp (other than sulphite) – chemical pulp (sulphite) – unbleached chemical pulp – chemi-thermomechanical pulp (CTMP) – recycled-fibre pulp	Continental

		PCR						IMPACTS BASE		
		Primary data		Semi-specific data		Secondary data				
Stage	Sub-stage	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Generic inventory data		
								Processes	Technical representativeness	Geographical representativeness
Tissue manufacture	**Consumption of input materials**	Amount of raw materials used (for each pulp used: tonne air-dried/tonne of tissue)								
		Amount of wet-strength additive, ink and adhesive feedstock used for kitchen roll manufacture: mass (g) per consumer sales unit (CSU)						Production of the wet-strength additive, ink (for paper), adhesives		Worldwide
	Production data	For integrated-process plants (tissue production and converting): Amount and nature of the energy consumed: natural gas, fuel oils, electricity (kWh LHV per tonne of tissue)						Production and distribution of the energy consumed (natural gas, fuel oils, electricity and other fuels)		National (electricity) Worldwide (natural gas, fuel oils, other fuels)
		For non-integrated tissue production plants: Amount and nature of the energy consumed: natural gas, fuel oils, electricity (kWh LHV per tonne of tissue)		Electricity consumption for tissue converting by non-integrated tissue production plants (kWh per tonne of tissue) To be determined over year n-1. Default value: 300 kWh/t tissue				Production and distribution of the energy consumed (natural gas, fuel oils, electricity and other fuels)		National (electricity) Worldwide (natural gas, fuel oils, other fuels)
		Production plant location								
		Nature, amount (kg/t tissue) and ultimate fate of plant waste						Production and distribution of the energy consumed (natural gas, fuel oils, electricity and other fuels)		Worldwide
	Water absorption capacity	Water-absorption capacity (expressed in grams of water per gram of product)								

		PCR						IMPACTS BASE		
		Primary data		Semi-specific data		Secondary data				
								Generic inventory data		
Stage	Sub-stage	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Processes	Technical representativeness	Geographical representativeness
Transports	Upstream					Transport of the wood (forest to pulp mill) – Distance: 50 km- Impact factor for transport by truck with a 25t-capacity payload, actual payload: – 22 t, fuel consumption on a full tank: – 38 L diesel/t, empty backhaul rate: 100 %		Road-haulage transport	Transport by truck with a 25t payload capacity	Worldwide
						Transport of recycled paper to the pulp mill – Distance: 300 km - Impact factor for transport by truck with a 25t-capacity payload, actual payload: 22 t, fuel consumption on a full tank: 38 L diesel/t, empty backhaul rate: 40 %		Road-haulage transport		Worldwide
	from the pulp production plant to the tissue production plant			Type of transport (25t road haulage, rail, ship) Mean distance travelled between the production plant and the tissue production plant Road and/or ship, by default - local: 1000 km by 25t truck - continental: 2000 km by 25t truck - intercontinental: 18,000 km by boat + 1500 km by 25t truck In the case of road haulage transport: payload capacity of the truck, actual payload (or fill factor), fuel consumption on a full tank, empty backhaul rate By default: Payload capacity of the truck: 25t, actual payload: 25t, fuel consumption on a full tank: 38 L diesel/t, empty backhaul rate: 21 %				Road haulage transport, rail freight transport, cargo ship transport	Transport by truck with a 25t payload capacity Rail freight transport Cargo ship transport	Worldwide

		PCR						IMPACTS BASE		
		Primary data		Semi-specific data		Secondary data				
Stage	Sub-stage	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Generic inventory data		
								Processes	Technical representativeness	Geographical representativeness
Transports	from product packing plant to point-of-sale			Type of transport (25t road haulage, rail, ship) Mean distance travelled between the production plant and the point-of-sale Road and/or ship, by default - local: 1000 km by 25t truck - continental: 2000 km by 25t truck - intercontinental: 18,000 km by boat + 1500 km by 25t truck In the case of road haulage transport: payload capacity of the truck, actual payload (or fill factor), fuel consumption on a full tank, empty backhaul rate By default**:** Payload capacity of the truck: 25t, actual payload: 10t, fuel consumption on a full tank: 38 L diesel/t, empty backhaul rate: 40 %.				Road haulage transport, rail freight transport, container ship transport	Transport by truck with a 25t payload capacity Rail freight transport Cargo ship transport	Worldwide

		PCR						IMPACTS BASE		
		Primary data		Semi-specific data		Secondary data				
Stage	Sub-stage	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Activity-related data, to be linked to in-Base inventory data	Elementary flows and data without direct links to the Base	Generic inventory data		
								Processes	Technical representativeness	Geographical representativeness
End-of-life	Treatment of end-of-life product	— Amount: see above (raw materials stage)					HW treatment scenario (general principles for an environmental communication on mass-market products (Part 0))	Disposal, incineration with and without paper waste-to-energy recovery	End-of-life of kitchen roll in household waste	France
	Treatment of end-of-life primary packaging waste	— Amount: see above (raw materials stage)					HW treatment scenario (general principles for an environmental communication on mass-market products (Part 0))	Disposal, incineration with and without plastic (PE, PP) waste-to-energy recovery	End-of-life of packaging (film) in household waste	France
	Treatment of end-of-life core	— Amount: see above (raw materials stage)					HW treatment scenario (general principles for an environmental communication on mass-market products (Part 0))	Disposal, incineration with and without carton waste-to-energy recovery	End-of-life of cores in household waste	France
	Treatment of end-of-life secondary packaging waste	— Amount: see above (raw materials stage)					Recycling rates for secondary packaging: use the most up-to-date data and the HW treatment scenario (general principles for an environmental communication on mass-market products (Part 0))	Incineration with carton waste-to-energy recovery, plastic (PE, PP) and corrugated board recycling	End-of-life of secondary packaging	France

9. Situations for which additional data is a recommendation

To be completed if necessary.

10. Data validity over time and update frequency

Point dealt with cross-sectorially; see General principles for an environmental communication on mass-market products (Part 0).

11. Validation process for data and results

The information related to drafting the communication that deals with hypotheses, data acquisition methods, the articulation between primary and secondary data, emission factors and assessment limitations shall be made free, transparent and accessible to all, via appropriate channels (reports, websites, etc.).

There is no obligation to disclose to a third party any information other than the communication, including the following results in particular:

— manufacturing processes,

— manufacturing locations,

— scrap rates,

— modes of transportation,

— nature of the energy consumed.

— However, this data must still be kept for the inspection authorities, for which it shall specify and record:

— the primary data,

— the sources of the secondary data,

— the default values used.

The data retention period will be set later.

12. References

[ISO 12625-8] NF EN ISO 12625-8, *Tissue paper and tissue products- Part 8: Water-absorption time and water-absorption capacity, basket-immersion test method.*

[DM] "*Case Study Sanft&Sicher Toiletpaper by DM Drogeriemarkt*", PCF Pilotprojekt Deutschland, January 2009. The study deals primarily with greenhouse gas emissions from kitchen roll (in rolls); comparison points are also given regarding other commonly-used LCA indicators.

[EL] *COMMISSION DECISION of 9 July 2009 establishing the ecological criteria for the award of the Community Eco-label for tissue paper, kitchen roll and other household absorbent paper products*, notified under document number C(2009) 4596], 2009/568/EC.

[FEFCO] "*European Database for Corrugated Board Life Cycle Studies*", FEFCO, Cepi ContainerBoard, 2009.

[GH] Analysis of responses to a pilot questionnaire, September-October 2012, PwC for Group'hygiène.

[KC] *Life Cycle Assessment of Tissue Products*, ERM for Kimberley Clark. Submitted for peer review, December 2007. Among the 7 product families subjected to an LCA, family 4 deals with kitchen roll based on production plants located in Europe and North America.

[PCRv] "Product-specific requirements (PCR) for preparing an environmental product declaration (EPD) for Tissue Paper manufactured from virgin fibres", PSR 2004:7, the Swedish Environmental Management Council, version 1.0, 2004-09-13.

[PCRr] "Product-specific requirements (PCR) for preparing an environmental product declaration (EPD) for Tissue Paper manufactured from recovered paper", PSR 2004:8, the Swedish Environmental Management Council, version 1.0, 2004-09-13.

Annex A

Criteria grid

	Greenhouse gas emissions	Depletion of non-renewable natural resources	Ultimate waste	Water consumption	Atmospheric acidification
Relevance	Indicator required by the general principles for an environmental communication on mass-market products (Part 0)				
Evaluation of an environmental issue in the product category and attributable to product	YES	YES	YES	YES	YES
Importance of the issue	Issue carries little importance for norming (0.035 %).	Issue carries little importance for norming (0.041 %).	Issue carries strongest importance of those studied for norming (0,2 %)	Issue carries relatively little importance for norming (0,01 %)	Issue carries relatively little importance for norming (0.02 %)
Differentiation for a majority of products on the market	Impacts caused by fossil fuel processes (gas, fuel, coal, electricity). A differentiation of a factor >2 between min/max values is found (sample with 6 references).	Impacts caused by processes and fossil fuel processes (gas, fuel, coal, electricity). A differentiation of a factor 2 between min/max values is found (sample with 6 references).	YES	Impacts caused by processes. A differentiation of a factor >2 between min/max values is found (sample with 11 references).	Impacts caused by processes and transportation. A differentiation of a factor >2 between min/max values is found (sample with 6 references).
Redundancy with other indicators	NO	NO	NO	NO	NO
Makes it possible to highlight eco-design options	YES (optimization of paper processes)	YES (optimization of paper processes)	Very probably low	YES (optimization of paper processes)	YES (optimization of paper processes and logistics)
Implementation, feasibility					
Possibility/ease to implement for the database	YES (IPCC 2007)	YES EDIP 97 (2004)	YES	Difficulty tied to estimation of paper manufacturers' net consumption (supplier data)	YES. Recipe 2008
Accessibility to primary data required to characterise the indicator	YES	YES	YES	Difficulty tied to estimation of paper manufacturers' net consumption (supplier data)	YES
Consistency					
Consistency with the recommendations of the ADEME/AFNOR platform	YES	YES	No. Flow indicator.	YES	YES
Life cycle scope	YES	YES. Even if some stages are neglected (secondary packaging, etc.)	YES. Even if some stages are neglected (secondary packaging, etc.)	YES. Even if some stages are neglected (use, etc.)	YES. Even if some stages are neglected (secondary packaging, etc.)
Product/packaging scope	YES	YES	YES	YES	YES
Consistency with other selected indicators					
Robustness, reliability					
Scientific and international recognition	Present in the ILCD handbook (draft)	Present in the ILCD handbook (draft)	Not included in the ILCD handbook (draft)	Present in the ILCD handbook (draft)	Present in the ILCD handbook (draft)
Methodological robustness	IPCC 2007. Consensus-built method	Recommended in the ILCD handbook (draft)	No defined methodology in the general principles for an environmental communication on mass-market products (Part 0)	Temporary methodology defined in the general principles for an environmental communication on mass-market products (Part 0)	Recipe 2008 Consensus-built method
Reliability of the modelling component (computation rule	YES	YES	Estimation only (national average) for the post consumer share after end-of-life treatment	YES	YES
Expected reliability of primary data	YES	YES	Data not always available from paper manufacturers	Data not always available from paper manufacturers	YES
Reliability of the secondary data available	There is secondary data for pulp production. The other required secondary data (transportation by road/ship, electricity production, plastic and carton production) is available.				
Conclusion	Selected indicator	Selected indicator	Indicator not selected as several criteria are not met	Indicator not selected as several criteria are not met	Selected indicator

	Water eutrophication	Total primary energy	Biodiversity	Stratospheric ozone depletion	Soil sealing
Relevance					Indicator to be discussed under general principles for an environmental communication on mass-market products (Part 0)
Evaluation of an environmental issue in the product category and attributable to product	YES	YES	YES	NO	No. No specific identified link between this impact and kitchen roll production
Importance of the issue	Issue carries very little importance for norming (0.004 %)	Issue carries little importance for norming (0.042 %).	Sustainable forestry is only one of the elements that help preserve the biodiversity of this environment. The vast majority of kitchen roll manufacturers comply with "good manufacturing practices" and use fibres from sustainably-managed forests. Moreover, starting on 3 March 2013, regulations ban using any timber or timber products that come from illegal harvesting (European Parliament and Council Regulation No. 995/2010).	Standardization has not been carried out.	Standardization has not been carried out.
Differentiation for a majority of products on the market	Impacts caused by processes. A differentiation of a factor >4 between min/max values is found (sample with 6 references).	Impacts caused by fossil fuel processes (gas, fuel, coal, electricity). A differentiation of a factor 1.8 between min/max values is found (sample with 6 references).	YES		
Redundancy with other indicators	NO	NO	NO		
Makes it possible to highlight eco-design options	YES (optimization of paper processes)	YES (optimization of paper processes)	NO (does not change product design)		
Implementation, feasibility					
Possibility/ease to implement for the database	YES. Recipe 2008.	YES	NO		NO
Accessibility to primary data required to characterize the indicator	YES	YES	YES		NO
Consistency					
Consistency with the recommendations of the ADEME/AFNOR platform	YES	NO. Flow indicator.	YES		
Life cycle scope	YES. Even if some stages are neglected (secondary packaging, etc.)	YES. Even if some stages are neglected (secondary packaging, etc.)	YES		
Product/packaging scope	YES	YES	YES		
Consistency with other selected indicators			YES		

	Water eutrophication	Total primary energy	Biodiversity	Stratospheric ozone depletion	Soil sealing
Robustness, reliability					
Scientific and international recognition	Present in the ILCD handbook (draft)	Not included in the ILCD handbook (draft)	There is no single consensus indicator to date that would make it possible to account for a product's impact on biodiversity	YES	
Methodological robustness	Recipe 2008. Consensus-built method	N0 defined methodology in the general principles for an environmental communication on mass-market products (Part 0)	Same		NO
Reliability of the modelling component (computation rule)	YES	YES	There is no uniform traceability system for all forestry products		NO
Expected reliability of primary data	YES	YES	Yes if certification systems are implemented, otherwise no.		
Reliability of the secondary data available	There is secondary data for pulp production. The other required secondary data (transportation by road/ship, electricity production, plastic and carton production) is available.				
Conclusion	Indicator not selected due to the very low contribution to water eutrophication	Indicator not selected as several criteria are not met	Indicator selected as complementary information only as several criteria are not met	Indicator not selected as several criteria are not met	Indicator not selected as several criteria are not met

	Human toxicity	Particulates / respiratory inorganics	Ionizing radiation / human health	Photochemical ozone formation	Terrestrial eutrophication	Aquatic ecotoxicity
Relevance	Not considered	Not considered	Not considered	Not considered	Not considered	Not considered

List of organizations involved in the follow-up, drafting and/or making of this guide

3A CONSULTING
ACDLEC – ASSO CTRES DISTRIBUTEURS E LECLERC
ACV PLUS
ADEME [FRENCH AGENCY FOR ENVIRONMENT AND ENERGY MANAGEMENT]
AFNOR
AFNOR CERTIFICATION
AIRELE
ALTADEV
ANNE MARIE JOANNES DESPAUX
APINAPI
ASTEKA SARL
AUCHAN FRANCE – QUALITE MAISON LOISIRS
BASF AG
BASF FRANCE SAS
BERNARD COSMETICS
BIENS COMMUNS
BIO INTELLIGENCE SERVICE
BOSSA VERDE
BUYYOURWAY
CARREFOUR
CARREFOUR CMI
CARTON ONDULE DE FRANCE
CCD – CENTRE DE LA CONSOMMATION DURABLE
CCI [CHAMBER OF COMMERCE AND INDUSTRY] SEINE-ET-MARNE
CENTRE D'ANIMATION REGIONAL CARMA
CGDD – COMMISSARIAT GAL DEVELOPPEMENT DURABLE
CLIMAT MUNDI
CODDE [SUST. DEV. & ENVIR. DESIGN]
COHN&WOLFE
CONSEIL NATIONAL DE L'EMBALLAGE
COOPERATIVE MU
CRP HENRI TUDOR
CSO CNRS
CTP – CENTRE TECHNIQUE DU PAPIER
CYCLECO

DECATHLON

DECATHLON SA - B TWIN

DELAPLACE CONSULTING

DELIPAPIER SAS

DGCCRF [MINISTRY OF FINANCE AND INDUSTRY —DIRECTORATE FOR FAIR TRADE, FAIR COMPETITION AND ANTI-FRAUD MEASURES]

DGCIS / STIC

DOMINIQUE LE PAPE

DOUJAN

ECO CONCEVOIR

ECO EMBALLAGES SA

ECOACT

ECOEFF

ECOPULSE SARL

ECOVER FRANCE

EDANA

EFFICIENT INNOVATION

ELIPSO

ELO2

EMC DISTRIBUTION

ENVIRO STRATEGIES

ENVIRON FRANCE SAS

ERNST&YOUNG AND ASSOCIATES EYES

ETHIC AND LIFE

EVEA

EVEIO

FCD - FEDE COMMERCE DISTRIBUTION

FEBEA — [FRENCH FEDERATION FOR THE BEAUTY TRADE]

FEDERATION DES FAMILLES DE FRANCE

FEDERATION NATIONALE DE LA COIFFURE

FLORENCE BEDON

FLORENT CHALOT

FNE – FRANCE NATURE ENVIRONNEMENT

FONDATION WWF FRANCE

FRANCEAGRIMER

GENERATION PLUME

GINGKO 21

GIRARDOT CEDRIC – CEDD

GREEN CAPITAL - LE CHEQUIER VERT

GREENEXT SERVICE
GROUP HYGIENE
GROUPE ABCARE
H3C–CARAIBES
HOP CUBE
ILEC
INSTITUT DES CORPS GRAS
INTEREL
JOHNSON & JOHNSON SANTE BEAUTE FRANCE
JULIETTE MELEDIE
KAORI DEVELOPPEMENT DURABLE
KATARZYNA RENIE WISNIEWSKA
KATINATURE
KIMBERLY-CLARK SAS
KOREA INSTITUTE FOR TECHNOLOGY - KITECH
LABORATOIRE SCIENCE ET NATURE
LABORATOIRES POLIVE
LES CELLULOSES DE BROCELIANDE
LIFE CYCLE STRATEGIES PTY LTD
LOVE & GREEN
LUCART FRANCE SAS
MAISONS DU MONDE
MARIELLE BELIN
MARION HUET
MAXIME CHOISEL
MELITTA FRANCE
MEV – MAITRISE DE L'ENERGIE EN VILLE
MP HYGIENE
NATURE & DECOUVERTES
NATY AB
NOUS LA TERRE
ONTEX FRANCE
PHILIPPE SONNETTE
PIERRE FABRE SA
PPR – PINAULT PRINTEMPS REDOUTE
PRICEWATERHOUSECOOPERS ADVISORY
PROCTER & GAMBLE FRANCE SAS
PUR PROJET
QUANTIS

RDC ENVIRONNEMENT
SARALI
SARL P'TITS DESSOUS
SCA HYGIENE PRODUCTS SUPPLY
SCA TISSUE FRANCE
SCAMARK
SGS CTS
SGS NORTH AMERICA INC.
SILVE
SMETTRAL 22
SOLINNEN
SONOVISION
STANISLAS DUPRE
STEPHANE RABEHANTA
STRATEGREEN
SUSTAIN LTD
TOUDOO NATURA
UNILEVER FRANCE SAS
WEAVE AIR

List of organizations attending the validation of this guide (at the Environmental Communication platform meeting held 07 July 2014)

ADEME [FRENCH AGENCY FOR ENVIRONMENT AND ENERGY MANAGEMENT]

AFISE

AFNOR CERTIFICATION

APPLE OPERATIONS EUROPE

ARMOR SA

BNITH

BUREAU VERITAS CODDE

CGDD– COMMISSARIAT GAL DEVELOPPEMENT DURABLE

CHANTELLE

CINOV

COMITE FRANCEECLAT - CETEHOR

COPACEL

ECOFOLIO

FEBEA – FEDERATIONDES ENTREPRISES DE LA BEAUTE

HARP & ASSOCIES

HOP CUBE

INTERNATIONAL PAPER

MINISTRY FOR AGRICULTURE—FRENCH DIRECTORATE FOR FOOD, FARM SPATIAL PLANNING

NOVASHIRE

PRICEWATHERHOUSE COOPERS ADVISORY

SMURFIT KAPPA FRANCE SAS

SNFA

SOLINNEN

UNIFA

L'ADEME EN BREF

L'Agence de l'Environnement et de la Maîtrise de l'Énergie (ADEME) participe à la mise en œuvre des politiques publiques dans les domaines de l'environnement, de l'énergie et du développement durable. Afin de leur permettre de progresser dans leur démarche environnementale, l'agence met à disposition des entreprises, des collectivités locales, des pouvoirs publics et du grand public, ses capacités d'expertise et de conseil. Elle aide en outre au financement de projets, de la recherche à la mise en œuvre et ce, dans les domaines suivants : la gestion des déchets, la préservation des sols, l'efficacité énergétique et les énergies renouvelables, la qualité de l'air et la lutte contre le bruit.

L'ADEME est un établissement public sous la tutelle conjointe du ministère de l'Écologie, du Développement durable et de l'Énergie et du ministère de l'Enseignement supérieur et de la Recherche.

ADEME
Agence de l'Environnement et de la Maîtrise de l'Energie

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE

MINISTÈRE DE L'ÉCOLOGIE, DU DÉVELOPPEMENT DURABLE ET DE L'ÉNERGIE

MINISTÈRE DE L'ENSEIGNEMENT SUPÉRIEUR ET DE LA RECHERCHE

ADEME
20, avenue du Grésillé
BP 90406 | 49004 Angers Cedex 01

www.ademe.fr