

ETS Benchmarks – Preliminary list of definitions of products and system boundaries and status of carbon leakage exposure (state of play: 8/03/2010)

Disclaimer: The preliminary list should serve as basis for discussion and feedback from Member States and stakeholders. It is work in progress and reflects the state of play of 8 March 2010. The list has been compiled by DG Climate Action based on input provided by the sectors concerned and consultants.

Remarks:

- As default system boundary it will be assumed (until evidence for other system boundaries is provided) that all processes directly or indirectly linked to the production of the benchmarked product are included and that therefore, no additional free allocation to the installations concerned will be granted. However, the production of raw materials, intermediate products, feedstock or fuels is not covered by product benchmarks unless this is explicitly stated in the definition of the system boundaries.
- If no other reference is given, all product benchmarks refer to 1 ton of production sold.
- The carbon leakage exposure status of the benchmarked products is based on Commission Decision 2010/2/EU and is valid for 2013 and 2014. Further sectors might be added to this list by Commission Decision.

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
B.1: Refinery products	Mix of refinery products expressed as complexity weighted tonne (CWT)		All processes of the refinery directly or indirectly linked to the production of the benchmarked product as well as of all intermediate products are included.	yes	Definition not sufficiently precise to excluded 'specialities refineries' PRODCOM codes to be specified
C.1: Coke		23.10.10.30	All processes directly or indirectly linked to the process units coke ovens, H ₂ S/NH ₃ incineration, coal preheating (defreezing), coke gas extractor, desulphurization unit, distillation unit, steam generation plant, pressure control in batteries,	yes	

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			biological water treatment, miscellaneous heating of by-products and hydrogen separator are included. Coke oven gas cleaning is not included.		
E.1: Sintered ore		13.10.10.50	All processes directly or indirectly linked to the process units sinter strand, ignition, feedstock preparation units, hot screening unit, sinter cooling unit, cold screening unit and steam generation unit are included.	yes	
E.2: Hot metal			All processes directly or indirectly linked to the process units blast furnace, hot metal treatment units, blast furnace blowers, blast furnace hot stoves, basic oxygen furnace, secondary metallurgy units, vacuum ladles, casting units (including cutting), slag treatment unit, burden preparation, BF gas treatment unit, dedusting units, scrap pre-heating, coal drying for PCI, vessels preheating stands, casting ingots preheating stands, compressed air production, dust treatment unit (briquetting), sludge treatment unit (briquetting), steam injection in BF unit, steam generation plant, converter BOF gas cooling, BOF flares, BF flares and miscellaneous are included.	yes	Technology-neutral product definition required to distinct E.2 and E.3
E.3: EAF carbon steel	Steel containing tramp elements to such levels limiting the use to those applications where no high surface quality and processability is required.		All processes directly or indirectly linked to the process units electric arc furnace, secondary metallurgy, casting and cutting, post-combustion unit, dedusting unit, vessels heating stands, casting ingots preheating stands, scrap drying and scrap preheating are included.	yes	

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E.4: EAF high alloy steel	Steel containing more than 8% metallic alloying elements		All processes directly or indirectly linked to the process units electric arc furnace, secondary metallurgy, casting and cutting, post-combustion unit, dedusting unit, vessels heating stands, casting ingots preheating stands, slow cooling pit, scrap drying and scrap preheating are included. The process units FeCr converter and cryogenic storage of industrial gases are not included.	yes	
F.1: good casting			<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	yes	Only iron casting covered
G.1: Alumina	Aluminium oxide excluding artificial conundrum	27.42.12.00	All processes directly or indirectly linked to the production steps grinding, leaching, precipitation and calcination are included	yes	Split of BM needed (traded intermediate product)?
G.2: Pre-bake anode	Anodes for aluminium electrolysis use consisting of petrol coke, pitch and normally recycled anodes, which are formed to shape specifically intended for a particular smelter and baked in anode baking ovens to a temperature of around 1150°C (customs code 8545 1910)	n.a.	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	tbd	
G.3: Primary aluminium	<i>Tbd once scope of benchmark has been agreed</i>	27.42.11.30 27.42.11.53	All processes directly or indirectly linked to the production steps electrolysis and casting are included	yes	Treatment of casting to be decided
J.1 Cement clinker	cement clinker	26.51.11.00	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	yes	
K.1: Lime	Quicklime	26.52.10.33	<i>All processes directly or indirectly linked to the</i>	yes	As 100% CaO?

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			<i>production of the benchmarked product are included</i>		
K.2: Dolime	Calcined dolomite	14.12.20.30	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	no	
K.3: Sintered dolime	Mixture of calcium and magnesium oxides used solely for the production of refractory bricks and other refractory products with a minimum bulk density of 3.05 g/cm ³ .	14.12.20.55	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	no	
L.1: Float glass	Sheets of float / ground / polish glass (production sold)	26.11.12 NOT: 26.11.12.11 and 26.11.12.12	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	Yes	Per kg or m ² ?
L.2: Bottles of colourless glass	Bottles of colourless glass of a nominal capacity < 2.5 litres, for beverages and foodstuffs (excluding bottles covered with leather or composition leather; infant's feeding bottles) except extra-white flint products with an iron oxide content expressed as percent Fe ₂ O ₃ by weight lower than 0.03% and colour co-ordinates of L in the range 100 to 87, a in the range 0 to -5 and b in the range 0 to 3 (using the CIELAB advocated by the Commission Internationale d'Éclairage).	26.13.11.28	All processes directly or indirectly linked to the production steps materials handling, melting, forming, downstream processing, packaging and ancillary processes are included.	Yes	
L.3: Bottles of coloured glass	Bottles of coloured glass of a nominal capacity < 2.5 litres, for beverages and foodstuffs (excluding bottles covered with leather or composition leather; infant's feeding bottles) except extra-white flint products with an iron oxide content expressed as percent	26.13.11.34	All processes directly or indirectly linked to the production steps materials handling, melting, forming, downstream processing, packaging and ancillary processes are included.	Yes	

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
	Fe ₂ O ₃ by weight lower than 0.03% and colour co-ordinates of L in the range 100 to 87, a in the range 0 to -5 and b in the range 0 to 3 (using the CIELAB advocated by the Commission Internationale d'Éclairage).				
L.4: Continuous filament glass fibre products	<p>The benchmark covers following products:</p> <ul style="list-style-type: none"> • Glass fibre threads cut into lengths of at least 3 mm but ≤ 50 mm (chopped strands) • Glass fibre filaments (including rovings) • Slivers; yarns and chopped strands of filaments of glass fibre (excluding glass fibre threads cut into lengths ≥ 3 mm but ≤ 50 mm) • Staple glass fibre articles • Glass fibre mats (including of glass wool) • Glass fibre voiles (including of glass wool) • Nonwoven glass fibre webs; felts; mattresses and boards <p>Products for thermal, acoustic and fire insulation are not included.</p>	26.14.11.10 26.14.11.30 26.14.11.50 26.14.11.70 26.14.12.10 26.14.12.30 26.14.12.50	All processes directly or indirectly linked to the production steps batch mineral raw materials storage, mixing and transfer, air compressors, glass melting, glass refining and distribution to fiberizing bushings, glass fibre forming (fiberizing), buildings heating and air conditioning, steam boiler(s), chillers, sizing and binder mixing, sizing and binder application, glass fibre winding, glass fibre chopping, glass fibre (forming cakes) drying, chopped strand drying, mat formation, mat binder application, mat drying, CFGF products packaging and CFGF products warehousing are included.	no	
M.1: low-density clay blocks				no	26.40.11
M.2: high-density clay blocks				no	26.40.11
M.3: facing bricks				no	26.40.11

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
M.4: pavers				no	26.40.11
M.5: roof tiles				no	26.40.12
M.6: spray dried powder				yes	Intermediate product for 26.30.10
M.7: dry-pressed wall and floor tiles				yes	26.30.10
N.1: mineral wool	Mineral wool insulation products for thermal, acoustic and fire applications manufactured using glass, rock or slag	26.14.12.10 26.14.12.30 26.82.16.10	All processes directly or indirectly linked to the production steps melting, fiberizing and injection of binders, curing and drying and forming are included.	no	
O.1: Plaster	Plasters consisting of calcined gypsum or calcium sulphate (including for use in building, for use in dressing woven fabrics or surfacing paper, for use in dentistry, for use in land remediation)	26.53.10.00	All processes directly or indirectly linked to the production steps milling, drying and calcining are included.	no	
O.3: Plasterboard	The benchmark covers boards, sheets, panels, tiles, similar articles of plaster/ compositions based on plaster, (not) faced/ reinforced with paper/ paperboard only, excluding articles agglom. with plaster, ornamented (in tonnes of stucco)	26.62.10.50 26.62.10.90	All processes directly or indirectly linked to the production steps milling, drying calcining and board drying are included.	no	
O.5. Dried secondary gypsum	Secondary gypsum is synthetic gypsum produced as a recycled by-product of the power industry. Recycled material from construction waste and demolition is also considered as secondary gypsum.	Intermediate product for 26.53.10.00	All processes directly or indirectly linked to the drying of secondary gypsum are included	no	0% moisture content as reference?
P.1: Kraft pulp	Kraft pulp is a wood pulp produced by the sulphate chemical process using cooking	21.11.12	All processes which are part of the pulp production process are included. Other activities	yes	PRODCOM code to be checked

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
	liquor expressed as net saleable production of Adt (Air Dried Tonnes)		on site that are not part of this process such as sawmilling activities, woodworking activities, production of chemicals for sale, waste treatment (treating waste onsite instead of offsite (drying, pelletising, incinerating, landfilling), PCC production and district heating are not included.		
P.2: Bleached sulphite pulp/ TMP and mechanical pulp	<p>This benchmarks covers following products expressed as net saleable production of Adt:</p> <ul style="list-style-type: none"> Sulphite pulp covers a specific pulp making process, e.g. pulp produced by cooking wood chips in a pressure vessel in the presence of bisulphite liquor Mechanical pulp grades such as TMP (thermomechanical pulp) and groundwood. Not covered by this group are the smaller subgroups of semichemical pulp and BCTMP – bleached chemi-thermomechanical. 	21.11.13 21.11.14.15 21.11.14.19	All processes which are part of the pulp production process are included. Other activities on site that are not part of this process such as sawmilling activities, woodworking activities, production of chemicals for sale, waste treatment (treating waste onsite instead of offsite (drying, pelletising, incinerating, landfilling), PCC production and district heating are not included.	yes	<p>PRODCOM codes to be checked</p> <p>BM might be split (depending on BM values)</p>
P.3: Recovered paper	Pulps of fibres derived from recovered (waste and scrap) paper or paperboard or of other fibrous cellulosic material expressed as net saleable production of Adt	?	All processes which are part of the pulp production process are included. Other activities on site that are not part of this process such as sawmilling activities, woodworking activities, production of chemicals for sale, waste treatment (treating waste onsite instead of offsite (drying, pelletising, incinerating, landfilling), PCC production and district heating are not included.	yes	Pulp from other fibres to be included?
Q.1: Newsprint	Newsprint, in rolls or sheets expressed as net saleable production of Adt	21.12.11.50	<i>All processes directly or indirectly linked to the production of the benchmarked product are</i>	yes	

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
			<i>included</i>		
Q.2: Uncoated fine paper	Uncoated paper and paperboard, of a kind used for writing, printing or other graphic purposes, and non-perforated punchcards and punch-tape paper, in rolls or rectangular (including square) sheets, of any size, other than paper covered by newsprint or tissue expressed as net saleable production of Adt	21.12.13 21.12.14 21.12.12	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	yes	PRODCOM codes to be checked
Q.3: Coated fine paper	Coated fine paper covering both coated mechanical and coated woodfree papers of a kind used for writing, printing or other graphic purposes, coated with kaolin or with other inorganic substances including carbon paper, self-copy paper and other copying or transfer paper expressed as net saleable production of Adt	21.12.53 21.12.55	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	yes	
Q.4: Tissue	Toilet or facial tissue stock, towel or napkin stock, cellulose wadding and webs of cellulose fibres expressed as net saleable production of Adt	21.12.21	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	yes	
Q.6: Testliner and fluting	Types of paperboard that meet specific tests adopted by the packaging industry to qualify for use as the outer facing layer for corrugated board, from which shipping containers are made expressed as net saleable production of Adt	21.12.25 21.12.24	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	yes	
Q.7: uncoated carton board	This group covers a wide range of products (expressed as net saleable production of Adt) which may be single or multiply, coated or uncoated. Carton board has good folding	21.12.23.35 21.12.23.37 21.12.30.65 21.12.30.69	<i>All processes directly or indirectly linked to the production of the benchmarked product are included</i>	yes	Q.7 and Q.8 might be merged if BM values similar More precise

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
	properties, stiffness and scoring ability. It is mainly used in cartons for consumer products such as frozen food, cosmetics and for liquid containers; also known as solid board, folding box board, boxboard or carrier board.	21.12.56.55 21.12.56.59 21.12.54			definition needed (based on Prodcod codes included?)
(Q.8: coated carton board)				yes	Q.7 and Q.8 might be merged if BM values similar
R.1: Carbon black	Furnace carbon black. Gas- and lamp black products are not covered by this benchmark.	Part of 24.13.11.30	All processes directly or indirectly linked to the production of furnace carbon black as well as finishing, packaging and flaring are included.	yes	
S.1: Nitric acid	Nitric acid (HNO ₃), to be recorded in tons HNO ₃ (100%)	24.15.10.50	All processes directly or indirectly linked to the production of the benchmarked product as well as the N ₂ O destruction process are included.	yes	
T.1: Adipic acid	Adipic acid to be recorded in tons of dry adipic acid	24.14.33.85	All processes directly or indirectly linked to the production of the benchmarked product as well as the N ₂ O destruction process are included.	yes	
V.1: Ammonia	Ammonia (NH ₃), to be recorded in tons produced	24.15.10.75	All processes directly or indirectly linked to the production of the benchmarked product are included.	yes	
W.1: high value chemicals (steam cracking)	Mix of ...			yes	
W.2: hydrogenation of aromatics feed				Yes	
W.3: BTX (extraction of the				Yes	

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
aromatics)					
W.4: xylenes (xylenes production)				Yes	
W.5: Vinyl chloride monomer	Vinyl chloride (chloroethylene)	24.14.13.71	All processes directly or indirectly linked to the production steps direct chlorination, oxychlorination and EDC cracking to VCM are included.	yes	100%?
W.6: ethylbenzene/ styrene			All processes directly or indirectly linked to the production of styrene as well as the intermediate product ethylbenzene (with the amount used as feed for the styrene production) are included.		
W.7: ethylene oxide/ monoethylene glycol					
W.8: phenol/ acetone	Phenol acetone	24.14.24.15 24.14.62.11		yes	
W.9: cumene		24.14.12.70		yes	
(W.10: S-PVC)	Polyvinyl chloride; not mixed with any other substances consisting of PVC particles with a mean size between 50 and 200 µm	24.16.30.10	All processes directly or indirectly linked to the production of S-PVC are included.	yes	
(W.11: E-PVC)	Polyvinyl chloride; not mixed with any other substances consisting of PVC particles with a mean size between 0.1 and 3 µm	24.16.30.10	All processes directly or indirectly linked to the production of E-PVC are included.	yes	
X.1: Hydrogen	Pure hydrogen and mixtures of hydrogen and carbon monoxide having a hydrogen content $\geq 60\%$ mole fraction of total contained	24.11.11.50	All processes directly or indirectly linked to the production of hydrogen and the separation of hydrogen and carbon monoxide are included.	yes	

Benchmarks	Product definition	PRODCOM 2007	System boundaries	CL expos.	Remarks by DG Climate Action
	hydrogen plus carbon monoxide based on the aggregation of all hydrogen- and carbon-monoxide-containing product streams exported from the installation concerned		The production from electrolysis is not covered by this product benchmark.		
X.2: Syngas	Mixtures of hydrogen and carbon monoxide having a hydrogen content <60% mole fraction of total contained hydrogen plus carbon monoxide based on the aggregation of all hydrogen- and carbon-monoxide-containing product streams exported from the installation concerned	n.a.	All processes directly or indirectly linked to the production of syngas and the separation of hydrogen and carbon monoxide are included.	yes	
Y.1: Soda ash	Disodium carbonate	24.13.33.10	All processes directly or indirectly linked to the process units brine purification, limekilns, slakers, absorption columns, filtration, calcination, distillation and densification are included.	yes	