

Appendix A Life Cycle Inventory data

Table A.1: Cold1 average model Life Cycle Inventory

PRODUCTION

Materials type	Material	COLD1 AVERAGE MODEL (g)
Ferrous metals	Ferrous metals	8.089
	Iron	762
	Mixed steel+plastic	56
	Stainless Steel	62
	Steel other	2.064
	Steel strip	9.444
	Steel tube & wire	282
	Steel	384
Ferrous metals TOT		21.143
Non ferrous metals	Ag	4
	Al	863
	AL sheet	71
	AL tube	86
	Cu	1.825
	Cu tube	28
	solder & braze	2
Non ferrous metals TOT		2.879
Packaging	Cardboard	1.444
	EPS	1.034
	PE - foil	248
	PP	31
	Wood	10
Packaging TOT		2.767
Plastics	ABS	766
	Elastomers	24
	EPS - Insulation	3
	Foamed Cabinet	-
	PA	57
	PE	53
	PET	2
	Plastics, others	174
	POM	26
	PP	922
	PPO	17
	PS	5.769
	PU Foam - Insulation	3.798
	PUR	2.128
	PVC (excl. wire insul.)	348
	TPE	2
Plastics	60	
Plastics TOT		14.148
Various	Adhesive tape	9
	Dessicant	2
	Electronic, boards, switches, lamp etc	83
	Glass	5.110
	Glue	80
	Magnet	46

Materials type	Material	COLD1 AVERAGE MODEL (g)
	Others	3
	Paint	64
	Paper (booklets etc)	195
	Refrigerant	28
	Refrigerant HC	5
	Rubber	49
	Running capacitor	2
	Thermostat	147
	Wiring	242
	Lubricating oil	140
Various TOT		6.204
TOTAL		47.141

SCRAP

Materials	Scrap (%)	Scrap End of Life
Ferrous metals	3	Recycled 90%
Non ferrous metals	1	Recycled 90%
Plastics	1,5	Recycled 90%
Various	0,5	Recycled 90%
Packaging	1,5	Recycled 90%

PROCESSING

Materials	Processing
Ferrous metals	Forming
Non ferrous metals	Forming/Wiring
Plastics	Extrusion/Injection moulding
Various	Assembling
Packaging	Cutting/Assembling

TRANSPORT

Average km COLD1 = 1.235,83 km

70 % TRUCK

30% SHIP

ASSEMBLING

COLD1 AVERAGE MODEL

Electricity	31,495	kWh
Heat	11,59	kWh
Water	0,048	m3
Other materials		
lubricant	27	g
cleaning agent	8	g
nitrogen	43	g
Argon	5	g
Oxigen	27	g
Helium	1,7	g
Volume of packaged final product	0,549	m3

USE

		COLD1 AVERAGE MODEL
Product Life (years)		14,00
Electricity	On-mode: Consumption per YEAR On-mode: n. of hours, cycles, settings, etc. / year Standby-mode: Consumption per hour Standby-mode: n. of hours / year Off-mode: Consumption per hour Off-mode: n. of hours / year TOTAL over Product Life	160,54
Heat	Avg. Heat Power Output No. of hours / year Type and efficiency TOTAL over Product Life	
Consumables (excl. spare parts)	Water Auxiliary material 1 Auxiliary material 2 Auxiliary material 3 Auxiliary material 4 Auxiliary material 5 Auxiliary material 6 Auxiliary material 7 Auxiliary material 8 Auxiliary material 9 Auxiliary material 10 Auxiliary material 11	
Maintenance, Repairs, Service	n. of km over Product-Life Spare parts Spare parts (functional components) Spare parts (aesthetic components- non functional) Spare parts (object 50 thermostat) Spare parts (object 7 compressor)	18,93 0,04 0,30 0,03 0,02

END OF LIFE

Cold1 AVERAGE MODEL (%)	
recycling	84,50
energy recovery	10,00
landfilling	5,50

Table A.2: Cold7 average model Life Cycle Inventory

PRODUCTION

Materials type	Material	COLD7 AVERAGE MODEL (g)
Ferrous metals	Ferrous metals	15.262
	Iron	711
	Mixed steel+plastic	7
	Stainless Steel	860
	Steel	3.328
	Steel other	1.373
	Steel strip	9.198
Ferrous metals TOT		30.738
Non ferrous metals	Ag	4
	Al	1.343
	Cu	1.893
	Zn	169
Non ferrous metals TOT		3.408
Packaging	Cardboard	2.673
	EPS	1.239
	PE foil	257
	PP	35
	Wood	10
Packaging TOT		4.214
Plastics	ABS	840
	Elastomers	4
	EPS	38
	PA	20
	PC	5
	PE	37
	PE foil	45
	PET	3
	Plastics, others	140
	POM	5
	PP	1.549
	PS	8.900
	PU foam - insulation	6.223
	PUR	1.712
	PVC (excl. wire insul.)	352
TPE	3	
Plastics	81	
Plastics TOT		19.958
Various	Adhesive tape	14
	color/paint	9
	Glass	6.219
	Glue	127

Materials type	COLD7 AVERAGE MODEL	
	Material	(g)
	Paper	272
	Refrigerant	49
	Rubber	202
	Thermostat	146
	Wiring	273
	Electronic, boards, switches, lamp etc	155
	Lubricating oil	190
Various TOT		7.654
TOTAL		65.972

SCRAP

Materials	Scrap (%)	Scrap End of Life
Ferrous metals	3	Recycled 90%
Non ferrous metals	1	Recycled 90%
Plastics	1,5	Recycled 90%
Various	0,5	Recycled 90%
Packaging	1,5	Recycled 90%

PROCESSING

Materials	Processing
Ferrous metals	Forming
Non ferrous metals	Forming/Wiring
Plastics	Extrusion/Injection moulding
Various	Assembling
Packaging	Cutting/Assembling

TRANSPORT

Average km COLD7 = 1.467 km

70 % TRUCK

30% SHIP

ASSEMBLING

COLD7 AVERAGE MODEL		
Energy (kWh)	Electricity	25,34
	Heat	15,69
	Mechanical	
Water (m3)		0,228
Other materials (g)	lubricant	27,000
	cleaning agent	8,000
	nitrogen	84,000
	Argon	5,000
	Oxigen	27,000
Volume of packaged final product (m3)		0,784

USE PHASE

COLD7 AVERAGE MODEL		
Product Life	15	years
Electricity		
On-mode: Consumption per year	313,15	kWh
On-mode: n. of hours, cycles, settings, etc. / year		
Standby-mode: Consumption per hour		
Standby-mode: n. of hours / year		
Off-mode: Consumption per hour		
Off-mode: n. of hours / year		
TOTAL over Product Life		
Heat		
Avg. Heat Power Output		
No. of hours / year		
Type and efficiency		
TOTAL over Product Life		
Consumables (excl. spare parts)		
Water		
Auxiliary material 1		
Auxiliary material 2		
Auxiliary material 3		
Auxiliary material 4		
Auxiliary material 5		
Auxiliary material 6		
Auxiliary material 7		
Auxiliary material 8		
Auxiliary material 9		
Auxiliary material 10		
Auxiliary material 11		
Maintenance, Repairs, Service		
n. of km over Product-Life	14,30	km/product life
Spare parts		
or Spare parts (object functional)	0,14	n/product life
Spare parts (object aesthetic)	0,40	n/product life
bottom glass shelf with profiles		
glass shelves with profiles	151,00	(g/product life ?)
thermostat	134,00	(g/product life ?)

END OF LIFE

	COLD7 AVERAGE MODEL
Dismantling	2,50
recycling	80,00
energy recovery	12,00
landfilling	5,50

Table A.3: Cold 8 average model Life Cycle Inventory

PRODUCTION

Materials type	Material	COLD8 AVERAGE MODEL
Ferrous metals	Ferrous metals	9.928
	Iron	437
	Mixed steel+plastic	603
	Stainless Steel	43
	Steel	2.880
	Steel strip	9.729
	Steel tube & wire	1.347
Ferrous metals TOT		24.966
Non ferrous metals	Ag	4
	Al	694
	AL tube	16
	Cu	1.570
	Cu tube	46
	solder & braze	2
Non ferrous metals TOT		2.332
objects	Accumulator	272
	Handle	65
objects TOT		337
packaging	Cardboard	1.935
	EPS	1.046
	Others (packaging)	24
	PE - foil	328
	PP	22
	Wood	10
packaging TOT		3.365
Plastics	ABS	999
	Elastomers	8
	EPS - Insulation	2
	PA	55
	PE	580
	Plastics, others	116
	POM	21
	PP	1.865
	PPO	7
	PS	10.322
	PU Foam - Insulation	6.524
	PUR	1.986

Materials type	Material	COLD8 AVERAGE MODEL
	PVC (excl. wire insul.)	529
	SAN	1.232
	TPE	6
	Plastics	73
Plastics TOT		24.326
Various	Adhesive tape	0
	Butyl rubber	19
	Capacitor	11
	Dessicant	2
	Electronic, boards, switches, lamp etc	240
	Glue	5
	Magnet	46
	Others	1
	Paint	142
	Paper (booklets etc)	182
	PCB	9
	Refrigerant	53
	Refrigerant HC	12
	Rubber	27
Thermostat	88	
Wiring	268	
Lubricating oil	170	
Various TOT		1.274
TOTAL		56.601

SCRAP

Materials	Scrap (%)	Scrap End of Life
Ferrous metals	3	Recycled 90%
Non ferrous metals	1	Recycled 90%
Plastics	1,5	Recycled 90%
Various	0,5	Recycled 90%
Packaging	1,5	Recycled 90%

PROCESSING

Materials	Processing
Ferrous metals	Forming
Non ferrous metals	Forming/Wiring
Plastics	Extrusion/Injection moulding

Various
Packaging

Assembling
Cutting/Assembling

TRANSPORT

Average km COLD8 = 563,51 km

70 % TRUCK

30% SHIP

ASSEMBLING

	COLD8 AVERAGE MODEL
Energy (kWh)	
Electricity	26,51
Electricity (assembling+lighting)	
Electricity (heating buildings)	
Heat	16,8
Heat (assembling)	
Heat (heating buildings)	
Mechanical	
Water (m3)	0,180
Other materials (g)	
Lubricant	27
Cleaning agent	8
Nitrogen	43
Argon	5
Oxygen	27
Helium	1,7
Volume of packaged final product (m3)	0,5216

USE

		COLD8 AVERAGE MODEL
Product Life	years	14,00
Electricity	-	
On-mode: Consumption per hour, cycle, setting, etc.	kWh	254,43
On-mode: n. of hours, cycles, settings, etc. / year	hrs.	
Standby-mode: Consumption per hour	kWh	
Standby-mode: n. of hours / year	-	
Off-mode: Consumption per hour	kWh	
Off-mode: n. of hours / year	-	
TOTAL over Product Life	-	
Heat	-	

		COLD8 AVERAGE MODEL
Avg. Heat Power Output	kW	
No. of hours / year	hrs.	
Type and efficiency	1	
TOTAL over Product Life	-	
Consumables (excl. spare parts)	-	
Water	m3/year	
Auxiliary material 1	kg/ year	
Auxiliary material 2	kg/ year	
Auxiliary material 3	kg/ year	
Auxiliary material 4	kg/ year	
Auxiliary material 5	kg/ year	
Auxiliary material 6	kg/ year	
Auxiliary material 7	kg/ year	
Auxiliary material 8	-	
Auxiliary material 9	-	
Auxiliary material 10	-	
Auxiliary material 11	-	
Maintenance, Repairs, Service	-	
n. of km over Product-Life	km/product life	2,75
Spare parts	g/product life	27,00
or Spare parts (functionals)	n/product life	0,10
Spare parts (aesthetics)	n/product life	0,15

END OF LIFE

		COLD8 AVERAGE MODEL
Dismantling	9	
recycling	71	
energy recovery	13	
landfilling	6	

Table A.4: Cold 9 average model Life Cycle Inventory

PRODUCTION

		COLD9 AVERAGE MODEL
Materials type	Material	
Ferrous metals	Iron	6.538
	Mixed steel+plastic	163
	Steel other	1.780
	Steel strip	9.055
	Ferrous metals	8.554
Ferrous metals TOT		26.089
Non ferrous metals	Al	3.216
	Cu	1.189
Non ferrous metals TOT		4.406
packaging	Cardboard	1.472
	EPE (protections)	33
	EPS	1.729

Materials type	Material	COLD9
		AVERAGE MODEL
	Others (packaging)	14
	PE - foil	542
	PP	17
	PVC	3
packaging TOT		3.810
Plastics	ABS	197
	PA	41
	PE	51
	Plastics, others	94
	PP	846
	PS	2.212
	PU Foam - Insulation	5.821
	PUR	2.188
	PVC	2.027
	PVC (excl. wire insul.)	327
	Plastics	107
Plastics TOT		13.910
Various	Electronic, boards, switches, lamp etc	25
	Others	843
	Paper (booklets etc)	115
	Refrigerant	83
	Rubber	9
	Thermopaste (paste)	707
	Thermostat	129
	Wiring	295
	Lubricating oil	249
Various TOT		2.455
TOTAL		50.669

SCRAP

Materials	Scrap (%)	Scrap End of Life
Ferrous metals	3	Recycled 90%
Non ferrous metals	1	Recycled 90%
Plastics	1,5	Recycled 90%
Various	0,5	Recycled 90%
Packaging	1,5	Recycled 90%

PROCESSING

Materials	Processing
Ferrous metals	Forming
Non ferrous metals	Forming/Wiring
Plastics	Extrusion/Injection moulding
Various	Assembling
Packaging	Cutting/Assembling

TRANSPORT

Average km COLD9 = 2.444 km

70 % TRUCK

30% SHIP

ASSEMBLING

	COLD9 AVERAGE MODEL
Energy (kWh)	
Electricity	17,65
Heat	6,64
Mechanical	
Water (m3)	0,08
Other materials (g)	
material 11	
material 12	
material 13	
Volume of packaged final product (m3)	0,76

USE PHASE

		COLD9 AVERAGE MODEL
Product Life	years	
Electricity	-	
On-mode: Consumption per year	kWh	321,1
On-mode: n. of hours, cycles, settings, etc. / year	-	
Standby-mode: Consumption per hour	kWh	
Standby-mode: n. of hours / year	-	
Off-mode: Consumption per hour	kWh	
Off-mode: n. of hours / year	-	

		COLD9 AVERAGE MODEL
TOTAL over Product Life	-	
Heat	-	
Avg. Heat Power Output	kW	
No. of hours / year	hrs.	
Type and efficiency	1	
TOTAL over Product Life	-	
Consumables (excl. spare parts)	-	
Water	m3/year	
Auxiliary material 1	kg/ year	
Auxiliary material 2	kg/ year	
Auxiliary material 3	kg/ year	
Auxiliary material 4	kg/ year	
Auxiliary material 5	kg/ year	
Auxiliary material 6	kg/ year	
Auxiliary material 7	kg/ year	
Auxiliary material 8	-	
Auxiliary material 9	-	
Auxiliary material 10	-	
Auxiliary material 11	-	
Maintenance, Repairs, Service	-	
n. of km over Product-Life	km/product life	
Spare parts	g/product life	
or Spare parts (functional)	n/product life	0,15
Spare parts (aesthetic)	n/product life	0,2

END OF LIFE

COLD9 AVERAGE MODEL (%)	
Dismantling	-
Recycling	83
ferrous metals	49
non ferrous metals	8
plastics	14
glass	-
packaging	12
Energy recovery	12
plastics	-
wood	-
paper	-
PUR	12
Land filling	5

Appendix B: EuP-Ecoreport data

Table A.5: COLD 1 – Refrigerator – INPUT in EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005

Document subject to a legal notice (see below)



ECO-DESIGN OF ENERGY-USING PRODUCTS

EuP EcoReport: [INPUTS](#)
Assessment of Environmental Impact

Nr	Product name	Date	Author
1	COLD 1	08/05/2007	CUTAIA-SCIALDONI

Pos nr	MATERIALS Extraction & Production Description of component	Weight in g	Category Click & select	Material or Process select Category first !
1	Ferrous metals (8089 g)	8184,6	3-Ferro	23-Cast iron
2	Iron (762 g)	771,0	3-Ferro	23-Cast iron
3	Mixed steel+plastic (56 g)	56,7	3-Ferro	25-Stainless 18/8 coil
4	Stainless Steel (62 g)	62,7	3-Ferro	25-Stainless 18/8 coil
5	Steel other (2064 g)	2088,4	3-Ferro	25-Stainless 18/8 coil
6	Steel strip (9444 g)	9555,6	3-Ferro	21-St sheet galv.
7	Steel tube & wire (282 g)	285,3	3-Ferro	22-St tube/profile
8	Steel (384 g)	388,5	3-Ferro	25-Stainless 18/8 coil
9	Ag (4 g)			
10	Al (863 g)	873,2	4-Non-ferro	26-Al sheet/extrusion
11	AL sheet (71 g)	71,8	4-Non-ferro	26-Al sheet/extrusion
12	AL tube (86 g)	87,0	4-Non-ferro	26-Al sheet/extrusion
13	Cu (1825 g)	1846,6	4-Non-ferro	29-Cu wire
14	Cu tube (28 g)	28,3	4-Non-ferro	30-Cu tube/sheet
15	solder & braze (2 g)	2,0	6-Electronics	52-Solder SnAg4Cu0.5
16	ABS (766 g)	775,1	1-BlkPlastics	10-ABS
17	Elastomers (24 g)	24,3	1-BlkPlastics	1-LDPE
18	EPS - Insulation (3 g)	3,0	1-BlkPlastics	6-EPS
19	Foamed Cabinet (0 g)			
20	PA (57 g)	57,7	2-TecPlastics	11-PA 6
21	PE (53 g)	53,6	1-BlkPlastics	2-HDPE
22	PET (2 g)	2,0	1-BlkPlastics	2-HDPE
23	Plastics, others (174 g)			
24	POM (26 g)	26,3	1-BlkPlastics	2-HDPE
25	PP (922 g)	932,9	1-BlkPlastics	4-PP
26	PPO (17 g)	17,2	1-BlkPlastics	4-PP
27	PS (5769 g)	5837,2	1-BlkPlastics	5-PS
28	PU Foam - Insulation (3798 g)	3842,9	2-TecPlastics	16-Flex PUR
29	PUR (2128 g)	2153,2	2-TecPlastics	15-Rigid PUR
30	PVC (excl. wire insul.) (348 g)	352,1	1-BlkPlastics	8-PVC
31	TPE (2 g)	2,0	1-BlkPlastics	1-LDPE
32	Plastics (60 g)			
33	Adhesive tape (9 g)			

34	Dessicant (2 g)			
35	Electronic, boards, switches, lamp etc (83 g)	83,9810382	6-Electronics	98-controller board
36	Glass (5110 g)	5.170	7-Misc.	54-Glass for lamps
37	Glue (80 g)			
38	Magnet (46 g)			
39	Others (3 g)			
40	Paint (64 g)	64,7564632	5-Coating	39-powder coating
41	Paper (booklets etc) (195 g)	197,304849	7-Misc.	57-Office paper
42	Refrigerant (see in Disposal)			
43	Refrigerant HC (see in Disposal)			
44	Rubber (49 g)	49,5791671	1-BlkPlastics	1-LDPE
45	Running capacitor (2 g)	2,02363948	6-Electronics	98-controller board
46	Thermostat (147 g)	148,737501	6-Electronics	98-controller board
47	Wiring (242 g)	244,860376	4-Non-ferro	29-Cu wire
48	Lubricating oil (140 g)			
	TOTAL	44343		

Pos nr	MANUFACTURING Description	Weight in g	Percentage Adjust	Category index (fixed)
201	OEM Plastics Manufacturing (fixed)	14129		20
202	Foundries Fe/Cu/Zn (fixed)	8956		34
203	Foundries Al/Mg (fixed)	0		35
204	Sheetmetal Manufacturing (fixed)	13212		36
205	PWB Manufacturing (fixed)	2		53
206	Other materials (Manufacturing already included)	8044		
207	Sheetmetal Scrap (Please adjust percentage only)	396	3%	37

Pos nr	DISTRIBUTION (incl. Final Assembly) Description		Answer	Category index (fixed)
208	Is it an ICT or Consumer Electronics product <15 kg ?		NO	59 0
209	Is it an installed appliance (e.g. boiler)?		NO	60 1
				62 1
210	Volume of packaged final product in m ³	in m3	0,549	63 0

Pos nr	USE PHASE Description		unit	Subtotals
211	<u>Product Life</u> in years	14	years	
	<u>Electricity</u>			
212	On-mode: Consumption per hour, cycle, setting, etc.	160,54	kWh	160,54
213	On-mode: No. Of hours, cycles, settings, etc. / year	1	#	
214	Standby-mode: Consumption per hour	0	kWh	0
215	Standby-mode: No. Of hours / year	0	#	
216	Off-mode: Consumption per hour	0	kWh	0
217	Off-mode: No. Of hours / year	0	#	
	TOTAL over Product Life	2,25	MWh (=000 kWh)	65
	<u>Heat</u>			

218	Avg. Heat Power Output	0	kW	
219	No. Of hours / year	0	hrs.	
220	Type and efficiency (Click & select)			85-not applicable
TOTAL over Product Life		0,00	GJ	
<u>Consumables (excl. spare parts)</u>				
221	Water	0	m ³ /year	83-Water per m3
222	Auxilliary material 1 (Click & select)	0	kg/ year	85-None
223	Auxilliary material 2 (Click & select)	0	kg/ year	85-None
224	Auxilliary material 3 (Click & select)	0	kg/ year	85-None
<u>Maintenance, Repairs, Service</u>				
225	No. of km over Product-Life	18,93	km / Product Life	86
226	Spare parts (fixed, 1% of product materials & manuf.)	443	g	

Pos nr	DISPOSAL & RECYCLING Description		unit	Subtotals
<u>Substances released during Product Life and Landfill</u>				
227	Refrigerant in the product (Click & select)	33	g	9-R290
228	Percentage of fugitive & dumped refrigerant	0%		
229	Mercury (Hg) in the product	0	g Hg	
230	Percentage of fugitive & dumped mercury	0%		
<u>Disposal: Environmental Costs perkg final product</u>				
231	Landfill (fraction products not recovered) in g en %	2217	5%	88-fixed
232	Incineration (plastics & PWB not re-used/recycled)	1414	g	91-fixed
233	Plastics: Re-use & Recycling ("cost"-side)	11939	g	92-fixed
<u>Re-use, Recycling Benefit</u>				
234	Plastics: Re-use, Closed Loop Recycling (please edit%)	0	0%	4
235	Plastics: Materials Recycling (please edit% only)	11939	85%	4
236	Plastics: Thermal Recycling (please edit% only)	1413	10%	72
237	Electronics: PWB Easy to Disassemble ? (Click&select)	1	YES	98
238	Metals & TV Glass & Misc. (95% Recycling)	28701		fixed

Table A.6: COLD 1 – Refrigerator – OUTPUT from EuP-Ecoreport

Nr	Life cycle Impact per product:	Date	Author
1	COLD 1	39210	CUTAIA-SCIALDONI

Life Cycle phases -->		PRODUCTION			DISTRI-	USE	END-OF-LIFE*			TOTAL	
Resources Use and Emissions		Material	Manuf.	Total	BUTION		Disposal	Recycl.	Total		
Materials		unit									
1	Bulk Plastics	g			8075			808	7268	8075	0
2	TecPlastics	g			6054			605	5448	6054	0
3	Ferro	g			21393			1070	20323	21393	0
4	Non-ferro	g			3152			158	2994	3152	0
5	Coating	g			65			3	62	65	0
6	Electronics	g			237			236	1	237	0
7	Misc.	g			5368			268	5099	5368	0
	Total weight	g			44343			3148	41195	44343	0
Other Resources & Waste		see note!									
									debit	credit	
8	Total Energy (GER)	MJ	2637	802	3439	797	23679	324	659	-335	27580
9	of which, electricity (in primary MJ)	MJ	407	482	889	2	23608	0	43	-43	24456
10	Water (process)	ltr	835	7	843	0	1582	0	29	-29	2396
11	Water (cooling)	ltr	3138	226	3364	0	62965	0	239	-239	66090
12	Waste, non-haz./ landfill	g	72030	2568	74598	411	28108	2757	168	2588	105705
13	Waste, hazardous/ incinerated	g	343	0	343	8	547	1415	27	1388	2286
Emissions (Air)											
14	Greenhouse Gases in GWP100	kg CO2 eq.	143	45	187	48	1035	24	17	7	1278
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	1371	192	1563	148	6096	60	40	21	7827
17	Volatile Organic Compounds (VOC)	g	4	0	5	11	10	2	0	2	28
18	Persistent Organic Pollutants (POP)	ng i-Teq	341	4	345	2	158	19	0	19	524
19	Heavy Metals	mg Ni eq.	576	10	586	21	421	87	0	87	1114
	PAHs	mg Ni eq.	955	0	955	27	66	0	2	-2	1045
20	Particulate Matter (PM, dust)	g	263	30	293	1877	300	679	5	674	3144
Emissions (Water)											
21	Heavy Metals	mg Hg/20	690	0	690	1	159	21	0	21	871
22	Eutrophication	g PO4	40	0	40	0	1	1	1	0	42
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

Table A.7: COLD 7 – Refrigerator-freezer – INPUT in EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005

Document subject to a legal notice (see below)



ECO-DESIGN OF ENERGY-USING PRODUCTS

EuP EcoReport: [INPUTS](#)
Assessment of Environmental Impact

Nr	Product name	Date	Author
1	COLD 7	08/05/2007	CUTAIA-SCIALDONI

Pos nr	MATERIALS Extraction & Production Description of component	Weight in g	Category Click & select	Material or Process select Category first!
1	Ferrous metals (15261,85 g)	15400,6	3-Ferro	23-Cast iron
2	Iron (710,8 g)	717,3	3-Ferro	23-Cast iron
3	Mixed steel+plastic (7 g)	7,1	3-Ferro	25-Stainless 18/8 coil
4	Stainless Steel (859,6 g)	867,4	3-Ferro	25-Stainless 18/8 coil
5	Steel (3327,92 g)	3358,2	3-Ferro	25-Stainless 18/8 coil
6	Steel other (1372,6 g)	1385,1	3-Ferro	25-Stainless 18/8 coil
7	Steel strip (9198 g)	9281,6	3-Ferro	21-St sheet galv.
8	Ag (4 g)			
9	Al (1342,85 g)	1355,1	4-Non-ferro	26-Al sheet/extrusion
10	Cu (1892,64 g)	1909,8	4-Non-ferro	29-Cu wire
11	Zn (168,8 g)	170,3	4-Non-ferro	31-CuZn38 cast
12	ABS (840,34 g)	848,0	1-BlkPlastics	10-ABS
13	Elastomers (4 g)	4,0	1-BlkPlastics	1-LDPE
14	EPS (38,2 g)	38,5	1-BlkPlastics	6-EPS
15	PA (19,68 g)	19,9	2-TecPlastics	11-PA 6
16	PC (5,2 g)	5,2	2-TecPlastics	12-PC
17	PE (36,51 g)	36,8	1-BlkPlastics	2-HDPE
18	PE foil (45,42 g)	45,8	1-BlkPlastics	2-HDPE
19	PET (2,53 g)	2,6	1-BlkPlastics	2-HDPE
20	Plastics, others (140,06 g)			
21	POM (4,63 g)	4,7	1-BlkPlastics	2-HDPE
22	PP (1549,35 g)	1563,4	1-BlkPlastics	4-PP
23	PS (8900,26 g)	8981,2	1-BlkPlastics	5-PS
24	PU foam - insulation (6223,47 g)	6280,0	2-TecPlastics	16-Flex PUR
25	PUR (1712,34 g)	1727,9	2-TecPlastics	15-Rigid PUR
26	PVC (excl. wire insul.) (352,14 g)	355,3	1-BlkPlastics	8-PVC
27	TPE (2,53 g)	2,6	1-BlkPlastics	1-LDPE
28	Plastics (81,29 g)			
29	Adhesive tape (14,24 g)			
30	color/paint (8,86 g)	8,9	5-Coating	39-powder coating
31	Glass (6219,32 g)	6275,84371	7-Misc.	54-Glass for lamps
32	Glue (126,56 g)			
33	Paper (271,56 g)	274,033103	7-Misc.	57-Office paper
34	Refrigerant (see in Disposal)			
35	Rubber (202,04 g)	203,879204	1-BlkPlastics	1-LDPE

36	Thermostat (145,7 g)	147,020258	6-Electronics	98-controller board
37	Wiring (272,6 g)	275,077712	4-Non-ferro	29-Cu wire
38	Electronic, boards, switches, lamp etc (155,09 g)	156,504485	6-Electronics	98-controller board
39	Lubricating oil (189,69 g)			
TOTAL		61710		

Pos nr	MANUFACTURING Description	Weight in g	Percentage Adjust	Category index (fixed)
201	OEM Plastics Manufacturing (fixed)	20120		20
202	Foundries Fe/Cu/Zn (fixed)	16288		34
203	Foundries Al/Mg (fixed)	0		35
204	Sheetmetal Manufacturing (fixed)	16254		36
205	PWB Manufacturing (fixed)	0		53
206	Other materials (Manufacturing already included)	9047		
207	Sheetmetal Scrap (Please adjust percentage only)	488	3%	37

Pos nr	DISTRIBUTION (incl. Final Assembly) Description		Answer	Category index (fixed)
208	Is it an ICT or Consumer Electronics product <15 kg ?		NO	59 0
209	Is it an installed appliance (e.g. boiler)?		NO	60 1
				62 1
210	Volume of packaged final product in m ³	in m3	0,7835	63 0
				64 1

Pos nr	USE PHASE Description		unit	Subtotals
211	Product Life in years	15	years	
	<u>Electricity</u>			
212	On-mode: Consumption per hour, cycle, setting, etc.	313,151	kWh	313,151
213	On-mode: No. Of hours, cycles, settings, etc. / year	1	#	
214	Standby-mode: Consumption per hour	0	kWh	0
215	Standby-mode: No. Of hours / year	0	#	
216	Off-mode: Consumption per hour	0	kWh	0
217	Off-mode: No. Of hours / year	0	#	
	TOTAL over Product Life	4,70	MWh (=000 kWh)	65
	<u>Heat</u>			
218	Avg. Heat Power Output	0	kW	
219	No. Of hours / year	0	hrs.	
220	Type and efficiency (Click & select)			85-not applicable
	TOTAL over Product Life	0,00	GJ	
	<u>Consumables (excl. spare parts)</u>			<u>material</u>
221	Water	0	m ³ /year	83-Water per m3
222	Auxilliary material 1 (Click & select)	0	kg/ year	85-None
223	Auxilliary material 2 (Click & select)	0	kg/ year	85-None
224	Auxilliary material 3 (Click & select)	0	kg/ year	85-None

	<u>Maintenance, Repairs, Service</u>			
225	No. of km over Product-Life	18,93	km / Product Life	86
226	Spare parts (fixed, 1% of product materials & manuf.)	617	g	
Pos nr	DISPOSAL & RECYCLING Description		unit	Subtotals
	<u>Substances released during Product Life and Landfill</u>			
227	Refrigerant in the product (Click & select)	48,71	g	4-R134a
228	Percentage of fugitive & dumped refrigerant	0%		
229	Mercury (Hg) in the product	0	g Hg	
230	Percentage of fugitive & dumped mercury	0%		
	<u>Disposal: Environmental Costs perkg final product</u>			
231	Landfill (fraction products not recovered) in g en %	3085	5%	88-fixed
232	Incineration (plastics & PWB not re-used/recycled)	2414	g	91-fixed
233	Plastics: Re-use & Recycling ("cost"-side)	16599	g	92-fixed
	<u>Re-use, Recycling Benefit</u>			
234	Plastics: Re-use, Closed Loop Recycling (please edit%)	503	3%	4
235	Plastics: Materials Recycling (please edit% only)	16096	80%	4
236	Plastics: Thermal Recycling (please edit% only)	2414	12%	72
237	Electronics: PWB Easy to Disassemble ? (Click&select)	0	YES	98
238	Metals & TV Glass & Misc. (95% Recycling)	39510		fixed

Table A.8: COLD 7 – OUTPUT from EuP-Ecoreport

Nr	Life cycle Impact per product:	Date	Author
1	COLD 7	39210	CUTAIA-SCIALDONI

Life Cycle phases -->		PRODUCTION			DISTRI-	USE	END-OF-LIFE*			TOTAL	
Resources Use and Emissions		Material	Manuf.	Total	BUTION		Disposal	Recycl.	Total		
Materials		unit									
1	Bulk Plastics	g			12087			1450	10636	12087	0
2	TecPlastics	g			8033			964	7069	8033	0
3	Ferro	g			31017			1551	29466	31017	0
4	Non-ferro	g			3710			186	3525	3710	0
5	Coating	g			9			0	8	9	0
6	Electronics	g			304			304	0	304	0
7	Misc.	g			6550			327	6222	6550	0
	Total weight	g			61710			4782	56927	61710	0
Other Resources & Waste		see note!									
		debet credit									
8	Total Energy (GER)	MJ	3560	1109	4669	1115	49414	481	940	-459	54738
9	of which, electricity (in primary MJ)	MJ	543	667	1209	2	49333	0	61	-61	50484
10	Water (process)	ltr	1288	10	1298	0	3301	0	40	-40	4559
11	Water (cooling)	ltr	4372	313	4685	0	131570	0	337	-337	135918
12	Waste, non-haz./ landfill	g	81396	3546	84942	564	58035	3836	237	3599	147140
13	Waste, hazardous/ incinerated	g	463	0	463	11	1141	2415	37	2378	3994
Emissions (Air)											
14	Greenhouse Gases in GWP100	kg CO2 eq.	195	62	257	67	2158	35	25	10	2493
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	1768	266	2034	206	12724	88	58	31	14994
17	Volatile Organic Compounds (VOC)	g	6	0	6	16	19	3	0	3	45
18	Persistent Organic Pollutants (POP)	ng i-Teq	403	5	408	3	327	26	0	26	765
19	Heavy Metals	mg Ni eq.	1056	12	1069	29	867	129	0	129	2093
	PAHs	mg Ni eq.	1414	0	1414	37	121	0	3	-3	1569
20	Particulate Matter (PM, dust)	g	415	41	456	2679	443	982	6	976	4554
Emissions (Water)											
21	Heavy Metals	mg Hg/20	988	0	988	1	328	31	0	31	1348
22	Eutrophication	g PO4	60	1	61	0	2	2	1	0	63
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

Table A.9: COLD 8 – Upright freezer – INPUT in EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005

Document subject to a legal notice (see below)



ECO-DESIGN OF ENERGY-USING PRODUCTS

EuP EcoReport: [INPUTS](#)
Assessment of Environmental Impact

Nr	Product name	Date	Author
1	COLD 8	08/05/2007	CUTAIA-SCIALDONI

Pos nr	MATERIALS Extraction & Production Description of component	Weight in g	Category Click &select	Material or Process select Category first !
1	Ferrous metals (9927,79 g)	10084,51517	3-Ferro	23-Cast iron
2	Iron (437,2 g)	444,1017735	3-Ferro	23-Cast iron
3	Mixed steel+plastic (603 g)	612,5191432	3-Ferro	25-Stainless 18/8 coil
4	Stainless Steel (42,8 g)	43,47565395	3-Ferro	25-Stainless 18/8 coil
5	Steel (2879,6 g)	2925,05825	3-Ferro	25-Stainless 18/8 coil
6	Steel strip (9728,6 g)	9882,178668	3-Ferro	21-St sheet galv.
7	Steel tube & wire (1347 g)	1368,264156	3-Ferro	22-St tube/profile
8	Ag (4 g)			
9	Al (694,28 g)	705,2360542	4-Non-ferro	26-Al sheet/extrusion
10	AL tube (16 g)	16,25258091	4-Non-ferro	26-Al sheet/extrusion
11	Cu (1570 g)	1594,783486	4-Non-ferro	29-Cu wire
12	Cu tube (45,6 g)	46,31985561	4-Non-ferro	30-Cu tube/sheet
13	solder & braze (2,2 g)	2,234729876	4-Non-ferro	31-CuZn38 cast
14	Accumulator (272 g)			
15	Handle (65 g)			
16	ABS (999,4 g)	1015,176835	1-BlkPlastics	10-ABS
17	Elastomers (8 g)	8,126290457	1-BlkPlastics	1-LDPE
18	EPS - Insulation (2,4 g)	2,437887137	1-BlkPlastics	6-EPS
19	PA (55,2 g)	56,07140415	2-TecPlastics	11-PA 6
20	PE (580 g)	589,1560581	1-BlkPlastics	2-HDPE
21	Plastics, others (116,2 g)			
22	POM (20,6 g)	20,92519793	1-BlkPlastics	2-HDPE
23	PP (1865,2 g)	1894,64462	1-BlkPlastics	4-PP
24	PPO (7,2 g)	7,313661411	1-BlkPlastics	4-PP
25	PS (10322,4 g)	10485,35258	1-BlkPlastics	5-PS
26	PU Foam - Insulation (6523,8 g)	6626,786711	2-TecPlastics	16-Flex PUR
27	PUR (1985,8 g)	2017,148449	2-TecPlastics	15-Rigid PUR
28	PVC (excl. wire insul.) (529 g)	537,4	1-BlkPlastics	8-PVC
29	SAN (1232,2 g)	1251,7	1-BlkPlastics	9-SAN
30	TPE (6,2 g)	6,3	1-BlkPlastics	1-LDPE
31	Plastics (72,7 g)			
32	Adhesive tape (0,4 g)			
33	Butyl rubber (19 g)	19,3	1-BlkPlastics	1-LDPE
34	Capacitor (10,6 g)	10,7673349	6-Electronics	44-big caps & coils
35	Dessicant (2 g)			

36	Electronic, boards, switches, lamp etc (240,2 g)	243,991871	6-Electronics	98-controller board
37	Glue (5 g)			
38	Magnet (45,6 g)			
39	Others (0,6 g)			
40	Paint (141,6 g)	143,835341	5-Coating	39-powder coating
41				
42	Paper (booklets etc) (182,4 g)	185,279422	7-Misc.	57-Office paper
43	PCB (8,8 g)			
44	Refrigerant (see in Disposal) (53 g)			
45	Refrigerant HC (see in Disposal) (12,4 g)			
46	Rubber (26,6 g)	27,0199158	1-BlkPlastics	1-LDPE
47	Thermostat (88,4 g)	89,7955096	6-Electronics	98-controller board
48	Wiring (268 g)	272,23073	4-Non-ferro	29-Cu wire
49	Lubricating oil (169,63 g)			
	TOTAL	53236		

Pos nr	MANUFACTURING Description	Weight in g	Percentage Adjust	Category index (fixed)
201	OEM Plastics Manufacturing (fixed)	24565		20
202	Foundries Fe/Cu/Zn (fixed)	10531		34
203	Foundries Al/Mg (fixed)	0		35
204	Sheetmetal Manufacturing (fixed)	14231		36
205	PWB Manufacturing (fixed)	11		53
206	Other materials (Manufacturing already included)	3898		
207	Sheetmetal Scrap (Please adjust percentage only)	427	3%	37

Pos nr	DISTRIBUTION (incl. Final Assembly) Description		Answer	Category index (fixed)
208	Is it an ICT or Consumer Electronics product <15 kg ?		NO	59 0
209	Is it an installed appliance (e.g. boiler)?		NO	60 1
				62 1
210	Volume of packaged final product in m ³	in m3	0,5216	63 0
				64 1

Pos nr	USE PHASE Description		unit	Subtotals
211	Product Life in years	14	years	
	<u>Electricity</u>			
212	On-mode: Consumption per hour, cycle, setting, etc.	254,4284	kWh	254,4284
213	On-mode: No. Of hours, cycles, settings, etc. / year	1	#	
214	Standby-mode: Consumption per hour	0	kWh	0
215	Standby-mode: No. Of hours / year	0	#	
216	Off-mode: Consumption per hour	0	kWh	0
217	Off-mode: No. Of hours / year	0	#	
	TOTAL over Product Life	3,56	MWh (=000 kWh)	65

<u>Heat</u>				
218	Avg. Heat Power Output	0	kW	
219	No. Of hours / year	0	hrs.	
220	Type and efficiency (Click & select)			85-not applicable
TOTAL over Product Life		0,00	GJ	
<u>Consumables (excl. spare parts)</u>				<u>material</u>
221	Water	0	m ³ /year	83-Water per m3
222	Auxilliary material 1 (Click & select)	0	kg/ year	85-None
223	Auxilliary material 2 (Click & select)	0	kg/ year	85-None
224	Auxilliary material 3 (Click & select)	0	kg/ year	85-None
<u>Maintenance, Repairs, Service</u>				
225	No. of km over Product-Life	2,75	km / Product Life	86
226	Spare parts (fixed, 1% of product materials & manuf.)	532	g	
Pos nr	DISPOSAL & RECYCLING Description		unit	Subtotals
<u>Substances released during Product Life and Landfill</u>				
227	Refrigerant in the product (Click & select)	65,4	g	4-R134a
228	Percentage of fugitive & dumped refrigerant	0%		
229	Mercury (Hg) in the product	0	g Hg	
230	Percentage of fugitive & dumped mercury	0%		
<u>Disposal: Environmental Costs perkg final product</u>				
231	Landfill (fraction products not recovered) in g en %	3726	7%	88-fixed
232	Incineration (plastics & PWB not re-used/recycled)	3199	g	91-fixed
233	Plastics: Re-use & Recycling ("cost"-side)	19652	g	92-fixed
<u>Re-use, Recycling Benefit</u>				
234	Plastics: Re-use, Closed Loop Recycling (please edit%)	2211	9%	4
235	Plastics: Materials Recycling (please edit% only)	17441	71%	4
236	Plastics: Thermal Recycling (please edit% only)	3193	13%	72
237	Electronics: PWB Easy to Disassemble ? (Click&select)	5	YES	98
238	Metals & TV Glass & Misc. (95% Recycling)	27227		fixed

Table A.10: COLD 8 – OUTPUT from EuP-Ecoreport

Nr	Life cycle Impact per product:	Date	Author
1	COLD 8	39210	CUTAIA-SCIALDONI

Life Cycle phases -->		PRODUCTION			DISTRI-	USE	END-OF-LIFE*		TOTAL		
Resources Use and Emissions		Material	Manuf.	Total	BUTION		Disposal	Recycl.	Total		
Materials		unit									
1	Bulk Plastics	g			15865			2062	13802	15865	0
2	TecPlastics	g			8700			1131	7569	8700	0
3	Ferro	g			25360			1775	23585	25360	0
4	Non-ferro	g			2637			185	2452	2637	0
5	Coating	g			144			10	134	144	0
6	Electronics	g			345			339	5	345	0
7	Misc.	g			185			13	172	185	0
	Total weight	g			53236			5515	47720	53236	0
Other Resources & Waste								see note! debit credit			
8	Total Energy (GER)	MJ	3617	1248	4865	759	37456	598	1137	-539	42542
9	of which, electricity (in primary MJ)	MJ	505	750	1255	1	37414	0	76	-76	38594
10	Water (process)	ltr	1148	11	1160	0	2505	0	50	-50	3614
11	Water (cooling)	ltr	5113	353	5466	0	99791	0	415	-415	104841
12	Waste, non-haz./ landfill	g	71214	3969	75184	393	44116	4632	294	4338	124031
13	Waste, hazardous/ incinerated	g	514	0	514	8	867	3200	47	3153	4542
Emissions (Air)											
14	Greenhouse Gases in GWP100	kg CO2 eq.	184	69	253	46	1635	44	31	12	1947
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	1584	299	1883	141	9650	109	72	36	11711
17	Volatile Organic Compounds (VOC)	g	6	0	6	11	14	4	0	4	35
18	Persistent Organic Pollutants (POP)	ng i-Teq	377	5	382	2	249	32	0	32	665
19	Heavy Metals	mg Ni eq.	722	11	733	20	650	161	0	161	1564
	PAHs	mg Ni eq.	1548	0	1549	26	91	0	4	-4	1661
20	Particulate Matter (PM, dust)	g	326	46	372	1784	234	1198	8	1190	3580
Emissions (Water)											
21	Heavy Metals	mg Hg/20	786	0	786	1	249	39	0	39	1075
22	Eutrophication	g PO4	60	1	61	0	2	2	2	1	63
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

Table A.11: COLD 9 – Chest freezer – INPUT in EuP-Ecoreport

Version 5 VHK for European Commission 28 Nov. 2005

Document subject to a legal notice (see below)



ECO-DESIGN OF ENERGY-USING PRODUCTS

EuP EcoReport: [INPUTS](#)
Assessment of Environmental Impact

Nr	Product name	Date	Author
1	COLD 9	08/05/2007	CUTAIA-SCIALDONI

Pos nr	MATERIALS Extraction & Production Description of component	Weight in g	Category Click & select	Material or Process select Category first !
1	Iron (6537,67 g)	6829,7	3-Ferro	23-Cast iron
2	Mixed steel+plastic (162,67 g)	169,9	3-Ferro	25-Stainless 18/8 coil
3	Steel other (1779,67 g)	1859,2	3-Ferro	25-Stainless 18/8 coil
4	Steel strip (9054,67 g)	9459,1	3-Ferro	21-St sheet galv.
5	Ferrous metals (8554 g)	8936,1	3-Ferro	23-Cast iron
6	Al (3216,33 g)	3360,0	4-Non-ferro	26-Al sheet/extrusion
7	Cu (1189,25 g)	1242,4	4-Non-ferro	29-Cu wire
8	ABS (197,33 g)	206,1	1-BlkPlastics	10-ABS
9	PA (41 g)	42,8	2-TecPlastics	11-PA 6
10	PE (51 g)	53,3	1-BlkPlastics	2-HDPE
11	Plastics, others (94 g)			
12	PP (845,6 g)	883,4	1-BlkPlastics	4-PP
13	PS (2211,67 g)	2310,5	1-BlkPlastics	5-PS
14	PU Foam - Insulation (5821 g)	6081,0	2-TecPlastics	16-Flex PUR
15	PUR (2188 g)	2285,7	2-TecPlastics	15-Rigid PUR
16	PVC (2026,67 g)	2117,2	1-BlkPlastics	8-PVC
17	PVC (excl. wire insul.) (327 g)	341,6	1-BlkPlastics	8-PVC
18	Plastics (106,93 g)			
19	Electronic, boards, switches, lamp etc (25,47 g)	26,6	6-Electronics	98-controller board
20	Others (842,67 g)			
21	Paper (booklets etc) (114,67 g)	119,8	7-Misc.	57-Office paper
22	Refrigerant (see in Disposal)			
23	Rubber (9,33 g)	9,8	1-BlkPlastics	1-LDPE
24	Thermopaste (paste) (707 g)			
25	Thermostat (128,67 g)	134,4	6-Electronics	98-controller board
26	Wiring (295 g)	308,2	4-Non-ferro	29-Cu wire
27	Lubricating oil (249,49 g)			
	TOTAL	46777		

Pos nr	MANUFACTURING Description	Weight in g	Percentage Adjust	Category index (fixed)
201	OEM Plastics Manufacturing (fixed)	14331		20
202	Foundries Fe/Cu/Zn (fixed)	15766		34
203	Foundries Al/Mg (fixed)	0		35
204	Sheetmetal Manufacturing (fixed)	14848		36

205	PWB Manufacturing (fixed)	0		53
206	Other materials (Manufacturing already included)	1831		
207	Sheetmetal Scrap (Please adjust percentage only)	445	3%	37
Pos nr	DISTRIBUTION (incl. Final Assembly) Description		Answer	Category index (fixed)
208	Is it an ICT or Consumer Electronics product <15 kg ?		NO	59 0
209	Is it an installed appliance (e.g. boiler)?		NO	60 1
				62 1
210	Volume of packaged final product in m ³	in m3	0,756333333	63 0
				64 1
Pos nr	USE PHASE Description		unit	Subtotals
211	<u>Product Life</u> in years	15	years	
	<u>Electricity</u>			
212	On-mode: Consumption per hour, cycle, setting, etc.	321,1	kWh	321,1
213	On-mode: No. Of hours, cycles, settings, etc. / year	1	#	
214	Standby-mode: Consumption per hour	0	kWh	0
215	Standby-mode: No. Of hours / year	0	#	
216	Off-mode: Consumption per hour	0	kWh	0
217	Off-mode: No. Of hours / year	0	#	
	TOTAL over Product Life	4,82	MWh (=000 kWh)	65
	<u>Heat</u>			
218	Avg. Heat Power Output	0	kW	
219	No. Of hours / year	0	hrs.	
220	Type and efficiency (Click & select)			85-not applicable
	TOTAL over Product Life	0,00	GJ	
	<u>Consumables (excl. spare parts)</u>			<u>material</u>
221	Water	0	m ³ /year	83-Water per m3
222	Auxilliary material 1 (Click & select)	0	kg/ year	85-None
223	Auxilliary material 2 (Click & select)	0	kg/ year	85-None
224	Auxilliary material 3 (Click & select)	0	kg/ year	85-None
	<u>Maintenance, Repairs, Service</u>			
225	No. of km over Product-Life		km / Product Life	86
226	Spare parts (fixed, 1% of product materials & manuf.)	468	g	
Pos nr	DISPOSAL & RECYCLING Description		unit	Subtotals
	<u>Substances released during Product Life and Landfill</u>			
227	Refrigerant in the product (Click & select)	82,7	g	4-R134a
228	Percentage of fugitive & dumped refrigerant	0%		
229	Mercury (Hg) in the product	0	g Hg	
230	Percentage of fugitive & dumped mercury	0%		

<u>Disposal: Environmental Costs perkg final product</u>	
231	Landfill (fraction products not recovered) in g en %
232	Incineration (plastics & PWB not re-used/recycled)
233	Plastics: Re-use & Recycling ("cost"-side)
<u>Re-use, Recycling Benefit</u>	
234	Plastics: Re-use, Closed Loop Recycling (please edit%)
235	Plastics: Materials Recycling (please edit% only)
236	Plastics: Thermal Recycling (please edit% only)
237	Electronics: PWB Easy to Disassemble ? (Click&select)
238	Metals & TV Glass & Misc. (95% Recycling)

	2339	5%	88-fixed
	1720	g	91-fixed
	11895	g	92-fixed
in g	% of plastics fraction		
	0	0%	4
	11895	83%	4
	1720	12%	72
	0	YES	98
	30823		fixed

Table A.12: COLD 9 – Refrigerator – OUTPUT from EuP-Ecoreport

Nr	Life cycle Impact per product:	Date	Author
1	COLD 9	39210	CUTAIA-SCIALDONI

Life Cycle phases -->		PRODUCTION			DISTRI-	USE	END-OF-LIFE*			TOTAL	
Resources Use and Emissions		Material	Manuf.	Total	BUTION		Disposal	Recycl.	Total		
Materials		unit									
1	Bulk Plastics	g			5922			711	5211	5922	0
2	TecPlastics	g			8410			1009	7400	8410	0
3	Ferro	g			27254			1363	25891	27254	0
4	Non-ferro	g			4911			246	4665	4911	0
5	Coating	g			0			0	0	0	0
6	Electronics	g			161			161	0	161	0
7	Misc.	g			120			6	114	120	0
	Total weight	g			46777			3495	43282	46777	0
Other Resources & Waste		see note!									
								debit	credit		
8	Total Energy (GER)	MJ	2871	850	3721	1078	50610	353	661	-308	55101
9	of which, electricity (in primary MJ)	MJ	336	511	847	2	50582	0	43	-43	51388
10	Water (process)	ltr	876	8	883	0	3380	0	29	-29	4235
11	Water (cooling)	ltr	3234	240	3474	0	134897	0	238	-238	138133
12	Waste, non-haz./ landfill	g	72347	2727	75074	546	59388	2906	167	2738	137746
13	Waste, hazardous/ incinerated	g	368	0	368	11	1169	1721	26	1694	3242
Emissions (Air)											
14	Greenhouse Gases in GWP100	kg CO2 eq.	160	47	207	65	2209	26	17	9	2491
15	Ozone Depletion, emissions	mg R-11 eq.	negligible								
16	Acidification, emissions	g SO2 eq.	1339	204	1542	199	13038	64	40	25	14804
17	Volatile Organic Compounds (VOC)	g	5	0	5	16	19	2	0	2	42
18	Persistent Organic Pollutants (POP)	ng i-Teq	380	5	385	3	335	20	0	20	743
19	Heavy Metals	mg Ni eq.	475	11	486	28	873	95	0	95	1482
	PAHs	mg Ni eq.	792	0	792	36	108	0	2	-2	934
20	Particulate Matter (PM, dust)	g	406	31	438	2586	283	714	5	710	4016
Emissions (Water)											
21	Heavy Metals	mg Hg/20	669	0	669	1	333	23	0	23	1026
22	Eutrophication	g PO4	51	0	51	0	2	1	1	0	53
23	Persistent Organic Pollutants (POP)	ng i-Teq	negligible								

Appendix C: SimaPro data

A.1 THE SIMAPRO v.7.1 SOFTWARE

Even if it is not in the scope of this study to perform a LCA in full accordance with ISO 14040, the methodology was applied as close as possible. To this end a specialized LCA software tool was used, the SimaPro 7.1, the last version of the software edit by Prè, NL (<http://www.pre.nl/simapro/default.htm>).

This software allows one to perform an ecological balance of a product along all its life, taking into account for each material used, raw material extraction, energy and water consumption (with distinction between renewable and non renewable resources) , and related impacts in air, water, and soil.

Again it is possible to use specific models for energy production, waste treatment, transport and ancillary materials production. It is also possible to use and compare different environmental impact assessment methodologies (Ecoindicator, CML, EPS, Ecopoint...) performing sensitivity analysis. Again in this software many databases are included in a form to be used for a same ecobalance (avoiding double sum of an impact or loss of data).

Using SimaPro it is possible to simulate the LCA of objects or services according to the ISO14040 standards.

A.2 INPUT DATA IN SIMAPRO

Table A.13: COLD 7 average model – INPUT data in SimaPro SW - ASSEMBLING

<i>SimaPro 7.1</i>	<i>Phase product</i>	
Project	EupProject	
Nome		
COLD7 assembling	as average on data from producers	
Materials/assembly		Note
Crude iron I	16024,94 g	ferrous metals
Crude iron I	746,34 g	iron
Steel I	7,35 g	steel + plastic
X5CrNi18 (304) I	902,58 g	Stainless Steel
Steel I	3494 g	steel
Steel I	1441,23 g	Steel other
Steel I	9657,9 g	Steel strip
Aluminium rec. I	1356,27 g	
Copper I	1911,57 g	
Zinc I	170,49 g	
Cardboard duplex/tripl	2699,94 g	for packaging
PS (EPS) B250 (1998)	1250,89 g	for packaging
PE (LDPE) I	259,52 g	for packaging (PE foil) + laminating
PP granulate average B250	35,26 g	
Poplar I	10,1 g	wood
ABS I	858,26 g	
EPDM rubber ETH U	4,1 g	

<i>SimaPro 7.1</i>	<i>Phase product</i>		
PS (EPS) B250 (1998)	39 g		
PA 6 I	20,1 g		
PC I	5,31 g		
PE (HDPE) I	37,29 g	as PE	
PE (HDPE) I	46,39 g	as PE foil + laminating	
PET amorph I	2,6 g		
HDPE B250	4,73 g	as POM	
PP I	1582,4 g		
PS (EPS) B250 (1998)	9090,09 g		
PUR semi rigid foam I	6356,2 g	PU foam - insulation	
PUR semi rigid foam I	1748,86 g		
PVC B250	359,65 g		
adhesive - glue	14,38 g	as adhesive	
Paint ETH S	8,95 g	white painting powder (53 g)	
Glass (white) B250	6281,51 g		
adhesive - glue	127,83 g		
Kraft paper, bleached, at plant/RER U	274,28 g		
Refrigerant R134a, at plant/RER U	49,2 g		
EPDM rubber ETH U	204,06 g		
Electronics for control units/RER U	147,15 g	AS THERMOSTAT (10 g)	
Copper I	275,33 g	AS WIRe + wiring	
Electronics for control units/RER U	156,65 g	electronics	
Lubricating oil, at plant/RER U	191,58 g		
Water demineralized ETH U	228 kg	consumption in assembling phase	
Lubricating oil, at plant/RER U	27 g		
Nitrogen, liquid, at plant/RER U	84 g		
Argon, liquid, at plant/RER U	5 g		
Oxygen, liquid, at plant/RER U	27 g	cotton+resins noise adsorbers	
Processes			
Electricity MV use in UCPTe U	25,34 kWh	during assembling	
Heat gas B250	15,69 MJ		
Truck 28t B250	68 tkm	transport for assembling	
Sea ship B250	29 tkm	transport for assembling	
Hot rolling, steel/RER U	2923 g		
Sheet rolling, steel/RER U	4829 g		
Extruding alum I	678 g		
Wire drawing, copper/RER U	1092 g		
Foaming, expanding/RER U	12940 g		
Injection moulding/RER U	2001 g		
Extrusion PVC I	251 g		

Table A.14: COLD 7 average model – INPUT data in SimaPro SW – SPARE PARTS

<i>SimaPro 7.1</i>	<i>Phase</i>
Project	<i>product</i>
	EupProject
Assembly:	
Nome	
COLD7 use materials (per LC)	
Materials/assembly	
COLD7 assembling	0,45 p

Table A.15: COLD 7 average model – INPUT data in SimaPro SW – LIFE CYCLE

<i>SimaPro 7.1</i>	<i>Phase</i>
Project	<i>product</i>
	EupProject
Life Cycle:	
Nome	
cold 7	
Assembly	
COLD7 assembling	1 p
Processes	
Electricity LV use UCPTE U	4697 kWh
Delivery van (<3.5t) B250	0,94 tkm
Scenario waste disposal/end of life	
cold 7 EoL	
Supplementary Life Cycle	
cold 7 use materials (per LC)	1

Table A.16: COLD 7 average model – INPUT data in SimaPro SW – END OF LIFE

<i>SimaPro 7.1</i>	<i>Phase</i>
Project	<i>product</i>
	EupProject
Scenario di fine vita:	
Nome	
cold 7 EoL	

SimaPro 7.1 *Phase product*

Referred to assembly
COLD7 assembling 1

Processes

Scenario of waste treatment
Recycling only B250 avoided 81
Incineration 2000 B250 (98) avoided 13
Landfill B250 (98) 6

A.3 ECO-INDICATOR 95 - REV EUP V2.03

SimaPro			08/08/200	
7.1	Method	Data:	7	Period: 16.11.31
Project	EupProject			

Nome Eco-indicator 95 - rev EuP V2.03

Comment Revised by Laura Cutaia (29.07.07) to convert output in form of the software EuP Ecoreport

The Eco-indicator 95 method was developed under the Dutch NOH programme by PRé consultants in a joint project with Philips Consumer Electronics, NedCar, Océ Copiers, Schuurink, CML Leiden, TU-Delft, IVAM-ER (Amsterdam) and CE Delft.

This V2 version is adapted for SimaPro 6.0. All characterisation factors in this method are entered for the 'unspecified' sub-compartment of each compartment (Raw materials, air, water, soil) and thus applicable on all sub-compartments.

Other adaptations (V2.1):

- Solid waste expanded with all mass waste flows in SimaPro 6 database
- Energy expanded with energy resources in SimaPro 6 database
- Pesticides to water expanded with pesticides to water in SimaPro 6 database
- Carbon dioxide, biogenic and uptake from carbon dioxide from air (Carbon dioxide, in air) are added to the methodology. Similar for 'Carbon monoxide, fossil' and 'Carbon monoxide, biogenic'.

Other adaptations (August 2004):

- Energy expanded with energy resources in SimaPro not adapted in V2.1 (values taken from Cumulative energy demand V1.2 method)
- Greenhouse, Summer smog: Methane, biogenic and Methane, fossil added
- Eutrophication: phosphorus compounds completed.
- Acidification, Eutrophication: nitrogen compounds completed.
- Acidification: sulphur compounds completed.
- "Particulates, > 2.5 um, and < 10um" added with the assumption that the characterization factor is the same as for "Particulates, < 10 um"

Other adaptations (March 2005):

- Eutrophication: Dinitrogen monoxide removed. Nitrogen, to water added (equal to nitrogen, total, to water).
- Solid waste: Waste, from drilling, unspecified added.

Other adaptations (August 2005, v2.03):

- In impact category Energy resources the characterisation value for "Gas, natural in ground" has been changed from 40,3 to 38.3 MJ LHV/m3 following the ecoinvent 1.2 update.

This method is NOT fully adapted for inventory data from the ecoinvent library and the USA Input Output Database 98, and therefore omits emissions that could have been included in impact assessment.

Method

Data:

The characterisation conforms to the CML guide used in the SimaPro2 method; however the toxicity scores are specified into heavy metals, carcinogenic substances, pesticides and winter smog.

Normalisation is based on 1990 levels for Europe excl. former USSR. In Europe g missing data was extrapolated using GNP's (Gross national product). In Europe e missing data was extrapolated using energy use. The Europe e normalisation is used in the Eco-indicator method.

Weighting is based on distance to target. Criteria for target levels are:

- One excess death per million per year
- 5% ecosystem degradation.
- Avoidance of smog periods

Due to continual adjustments of the method and/or inventory data sets the Eco-indicator 95 in SimaPro will not give the same result as the original printed version.

See database manual for further information. More information and the "Manual for Designers" can also be downloaded from <http://www.pre.nl>

Use
Damage
Assessment No
Use
Normalizati
on Yes
Use
Weighting Yes
Use
Addition Yes
Weighting
unit Pt

Categories
of Impact

Categories of Impact	greenhouse	kg CO2		
Air	(unspecified)	Carbon dioxide	000124-38-9	1 kg CO2 / kg
Air	(unspecified)	Carbon dioxide, biogenic	000124-38-9	1 kg CO2 / kg
Air	(unspecified)	Carbon dioxide, fossil	000124-38-9	1 kg CO2 / kg
Prima	(unspecified)	Carbon dioxide, in air	000124-38-9	-1 kg CO2 / kg
Air	(unspecified)	Carbon monoxide	000630-08-0	1,57 kg CO2 / kg
Air	(unspecified)	Carbon monoxide, biogenic	000630-08-0	1,57 kg CO2 / kg
Air	(unspecified)	Carbon monoxide, fossil	000630-08-0	1,57 kg CO2 / kg
Air	(unspecified)	Chlorinated fluorocarbons, hard		7100 kg CO2 / kg
Air	(unspecified)	Chlorinated fluorocarbons, soft		1600 kg CO2 / kg
Air	(unspecified)	Chloroform	000067-66-3	25 kg CO2 / kg
Air	(unspecified)	Dinitrogen monoxide	010024-97-2	296 kg CO2 / kg
Air	(unspecified)	Ethane, 1-chloro-1,1-difluoro-, HCFC-142	000075-68-3	1800 kg CO2 / kg
Air	(unspecified)	Ethane, 1,1-dichloro-1-fluoro-, HCFC-141b	001717-00-6	580 kg CO2 / kg
Air	(unspecified)	Ethane, 1,1-difluoro-, HFC-152a	000075-37-6	150 kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,1-trichloro-, HCFC-140	000071-55-6	100 kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,1-trifluoro-, HCFC-143a	000420-46-2	3800 kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,1,2-tetrafluoro-, HFC-134a	000811-97-2	1300 kg CO2 / kg
Air	(unspecified)	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-, CFC-113	000076-13-1	4500 kg CO2 / kg
Air	(unspecified)	Ethane, 1,2-dichloro-1,1,2,2-tetrafluoro-, CFC-114	000076-14-2	7000 kg CO2 / kg
Air	(unspecified)	Ethane, 2-chloro-1,1,1,2-tetrafluoro-, HCFC-124	002837-89-0	440 kg CO2 / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	<i>08/08/2007</i>	<i>Period:</i>	<i>16.11.31</i>
Air	(unspecified)	Ethane, 2,2-dichloro-1,1,1-trifluoro-, HCFC-123	000306-83-2	90	kg CO2 / kg
Air	(unspecified)	Ethane, chloropentafluoro-, CFC-115	000076-15-3	7000	kg CO2 / kg
Air	(unspecified)	Ethane, hexafluoro-, HFC-116	000076-16-4	9200	kg CO2 / kg
Air	(unspecified)	Ethane, pentafluoro-, HFC-125	000354-33-6	3400	kg CO2 / kg
Air	(unspecified)	Methane	000074-82-8	21	kg CO2 / kg
Air	(unspecified)	Methane, biogenic	000074-82-8	21	kg CO2 / kg
Air	(unspecified)	Methane, bromochlorodifluoro-, Halon 1211	000353-59-3	4900	kg CO2 / kg
Air	(unspecified)	Methane, bromotrifluoro-, Halon 1301	000075-63-8	4900	kg CO2 / kg
Air	(unspecified)	Methane, chlorodifluoro-, HCFC-22	000075-45-6	1600	kg CO2 / kg
Air	(unspecified)	Methane, chlorotrifluoro-, CFC-13	000075-72-9	13000	kg CO2 / kg
Air	(unspecified)	Methane, dichloro-, HCC-30	000075-09-2	15	kg CO2 / kg
Air	(unspecified)	Methane, dichlorodifluoro-, CFC-12	000075-71-8	7100	kg CO2 / kg
Air	(unspecified)	Methane, fossil	000074-82-8	11	kg CO2 / kg
Air	(unspecified)	Methane, tetrachloro-, CFC-10	000056-23-5	1300	kg CO2 / kg
Air	(unspecified)	Methane, tetrafluoro-, FC-14	000075-73-0	6500	kg CO2 / kg
Air	(unspecified)	Methane, trichlorofluoro-, CFC-11	000075-69-4	3400	kg CO2 / kg
Impact Category	ozone layer	kg CFC11			
Air	(unspecified)	Chlorinated fluorocarbons, hard		1	kg CFC11 / kg
Air	(unspecified)	Chlorinated fluorocarbons, soft		0,055	kg CFC11 / kg
Air	(unspecified)	Ethane, 1-chloro-1,1-difluoro-, HCFC-142	000075-68-3	0,065	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1-dichloro-1-fluoro-, HCFC-141b	001717-00-6	0,11	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,1-trichloro-, HCFC-140	000071-55-6	0,12	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,1-trifluoro-2,2-chlorobromo-, Halon 2311	000151-67-7	0,14	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,1,2-tetrafluoro-2-bromo-, Halon 2401	000124-72-1	0,25	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,1,2-trichloro-1,2,2-trifluoro-, CFC-113	000076-13-1	1,07	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,2-dibromotetrafluoro-, Halon 2402	000124-73-2	7	kg CFC11 / kg
Air	(unspecified)	Ethane, 1,2-dichloro-1,1,2,2-tetrafluoro-, CFC-114	000076-14-2	0,8	kg CFC11 / kg
Air	(unspecified)	Ethane, 2-chloro-1,1,1,2-tetrafluoro-, HCFC-124	002837-89-0	0,022	kg CFC11 / kg
Air	(unspecified)	Ethane, 2,2-dichloro-1,1,1-trifluoro-, HCFC-123	000306-83-2	0,02	kg CFC11 / kg
Air	(unspecified)	Ethane, chloropentafluoro-, CFC-115	000076-15-3	0,5	kg CFC11 / kg
Air	(unspecified)	Methane, bromo-, Halon 1001	000074-83-9	0,6	kg CFC11 / kg
Air	(unspecified)	Methane, bromochlorodifluoro-, Halon 1211	000353-59-3	4	kg CFC11 / kg
Air	(unspecified)	Methane, bromodifluoro-, Halon 1201	001511-62-2	1,4	kg CFC11 / kg
Air	(unspecified)	Methane, bromotrifluoro-, Halon 1301	000075-63-8	16	kg CFC11 / kg
Air	(unspecified)	Methane, chlorodifluoro-, HCFC-22	000075-45-6	0,055	kg CFC11 / kg
Air	(unspecified)	Methane, chlorotrifluoro-, CFC-13	000075-72-9	1	kg CFC11 / kg
Air	(unspecified)	Methane, dibromodifluoro-, Halon 1202	000075-61-6	1,25	kg CFC11 / kg
Air	(unspecified)	Methane, dichlorodifluoro-, CFC-12	000075-	1	kg CFC11 / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	08/08/2007 71-8	<i>Period:</i> 16.11.31
Air	(unspecified)	Methane, tetrachloro-, CFC-10	000056-23-5	1,08 kg CFC11 / kg
Air	(unspecified)	Methane, trichlorofluoro-, CFC-11	000075-69-4	1 kg CFC11 / kg
Air	(unspecified)	Propane, 1,3-dichloro-1,1,2,2,3-pentafluoro-, HCFC-225cb	000507-55-1	0,033 kg CFC11 / kg
Air	(unspecified)	Propane, 3,3-dichloro-1,1,1,2,2-pentafluoro-, HCFC-225ca	000422-56-0	0,025 kg CFC11 / kg
Impact Category	acidification	kg SO2		
Air	(unspecified)	Ammonia	007664-41-7	1,88 kg SO2 / kg
Air	(unspecified)	Ammonium carbonate	000506-87-6	0,67 kg SO2 / kg
Air	(unspecified)	Ammonium nitrate	006484-52-2	0,4 kg SO2 / kg
Air	(unspecified)	Ammonium, ion	014798-03-9	1,78 kg SO2 / kg
Air	(unspecified)	Dinitrogen monoxide	010024-97-2	1,78 kg SO2 / kg
Air	(unspecified)	Hydrogen chloride	007647-01-0	0,88 kg SO2 / kg
Air	(unspecified)	Hydrogen fluoride	007664-39-3	1,6 kg SO2 / kg
Air	(unspecified)	Hydrogen sulphide	007783-06-4	1,88 kg SO2 / kg
Air	(unspecified)	Nitric acid	007697-37-2	0,51 kg SO2 / kg
Air	(unspecified)	Nitric oxide	010102-43-9	1,07 kg SO2 / kg
Air	(unspecified)	Nitrogen dioxide	010102-44-0	0,7 kg SO2 / kg
Air	(unspecified)	Nitrogen oxides	011104-93-1	0,7 kg SO2 / kg
Air	(unspecified)	Sulphur dioxide	007446-09-5	1 kg SO2 / kg
Air	(unspecified)	Sulphur oxides		1 kg SO2 / kg
Air	(unspecified)	Sulphur trioxide	007446-11-9	0,8 kg SO2 / kg
Air	(unspecified)	Sulphuric acid	007664-93-9	0,65 kg SO2 / kg
Impact Category	eutrophication	kg PO4		
Land	(unspecified)	Ammonia	007664-41-7	0,33 kg PO4 / kg
Water	(unspecified)	Ammonia	007664-41-7	0,33 kg PO4 / kg
Air	(unspecified)	Ammonia	007664-41-7	0,33 kg PO4 / kg
Air	(unspecified)	Ammonium carbonate	000506-87-6	0,12 kg PO4 / kg
Land	(unspecified)	Ammonium nitrate	006484-52-2	0,074 kg PO4 / kg
Air	(unspecified)	Ammonium nitrate	006484-52-2	0,074 kg PO4 / kg
Water	(unspecified)	Ammonium, ion	014798-03-9	0,33 kg PO4 / kg
Land	(unspecified)	Ammonium, ion	014798-03-9	0,33 kg PO4 / kg
Air	(unspecified)	Ammonium, ion	014798-03-9	0,33 kg PO4 / kg
Water	(unspecified)	BOD5, Biological Oxygen Demand		0,11 kg PO4 / kg
Water	(unspecified)	COD, Chemical Oxygen Demand		0,05 kg PO4 / kg
Water	(unspecified)	DOC, Dissolved Organic Carbon		0,066 kg PO4 / kg
Water	(unspecified)	Kjeldahl-N		0,42 kg PO4 / kg
Air	(unspecified)	Nitrate	014797-55-8	0,1 kg PO4 / kg
Land	(unspecified)	Nitrate	014797-55-8	0,1 kg PO4 / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	08/08/2007	<i>Period:</i> 16.11.31
Water	(unspecified)	Nitrate	014797-55-8	0,1 kg PO4 / kg
Land	(unspecified)	Nitric acid	007697-37-2	0,093 kg PO4 / kg
Water	(unspecified)	Nitric acid	007697-37-2	0,093 kg PO4 / kg
Air	(unspecified)	Nitric acid	007697-37-2	0,093 kg PO4 / kg
Air	(unspecified)	Nitric oxide	010102-43-9	0,2 kg PO4 / kg
Water	(unspecified)	Nitrite	014797-65-0	0,13 kg PO4 / kg
Air	(unspecified)	Nitrite	014797-65-0	0,13 kg PO4 / kg
Water	(unspecified)	Nitrogen	007727-37-9	0,42 kg PO4 / kg
Air	(unspecified)	Nitrogen dioxide	010102-44-0	0,13 kg PO4 / kg
Air	(unspecified)	Nitrogen oxides	011104-93-1	0,13 kg PO4 / kg
Land	(unspecified)	Nitrogen oxides	011104-93-1	0,13 kg PO4 / kg
Water	(unspecified)	Nitrogen oxides	011104-93-1	0,13 kg PO4 / kg
Land	(unspecified)	Nitrogen, total		0,42 kg PO4 / kg
Water	(unspecified)	Nitrogen, total		0,42 kg PO4 / kg
Air	(unspecified)	Nitrogen, total		0,42 kg PO4 / kg
Land	(unspecified)	Phosphate	014265-44-2	1 kg PO4 / kg
Air	(unspecified)	Phosphate	014265-44-2	1 kg PO4 / kg
Water	(unspecified)	Phosphate	014265-44-2	1 kg PO4 / kg
Land	(unspecified)	Phosphoric acid	007664-38-2	0,97 kg PO4 / kg
Air	(unspecified)	Phosphoric acid	007664-38-2	0,97 kg PO4 / kg
Water	(unspecified)	Phosphoric acid	007664-38-2	0,97 kg PO4 / kg
Water	(unspecified)	Phosphorus	007723-14-0	3,06 kg PO4 / kg
Land	(unspecified)	Phosphorus	007723-14-0	3,06 kg PO4 / kg
Air	(unspecified)	Phosphorus	007723-14-0	3,06 kg PO4 / kg
Land	(unspecified)	Phosphorus pentoxide	001314-56-3	1,34 kg PO4 / kg
Water	(unspecified)	Phosphorus pentoxide	001314-56-3	1,34 kg PO4 / kg
Air	(unspecified)	Phosphorus pentoxide	001314-56-3	1,34 kg PO4 / kg
Land	(unspecified)	Phosphorus, total		3,06 kg PO4 / kg
Water	(unspecified)	Phosphorus, total		3,06 kg PO4 / kg
Air	(unspecified)	Phosphorus, total		3,06 kg PO4 / kg
Water	(unspecified)	Suspended solids, inorganic		0,08 kg PO4 / kg
Water	(unspecified)	Suspended solids, unspecified		0,08 kg PO4 / kg
Water	(unspecified)	TOC, Total Organic Carbon		0,066 kg PO4 / kg
Impact Category	heavy metals	kg Pb		
Water	(unspecified)	Antimony	007440-36-0	2 kg Pb / kg
Water	(unspecified)	Arsenic, ion	017428-41-0	1 kg Pb / kg
Water	(unspecified)	Barium	007440-39-3	0,014 kg Pb / kg
Water	(unspecified)	Boron	007440-42-8	0,03 kg Pb / kg
Air	(unspecified)	Cadmium	007440-43-9	50 kg Pb / kg
Air	(unspecified)	Cadmium oxide	001306-	50 kg Pb / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	<i>08/08/200</i> 7 19-0	<i>Period:</i> 16.11.31
Water	(unspecified)	Cadmium, ion	022537-48-0	3 kg Pb / kg
Water	(unspecified)	Chromium	007440-47-3	0,2 kg Pb / kg
Water	(unspecified)	Copper, ion	017493-86-6	0,005 kg Pb / kg
Air	(unspecified)	Heavy metals, unspecified		1 kg Pb / kg
Water	(unspecified)	Lead	007439-92-1	1 kg Pb / kg
Air	(unspecified)	Lead	007439-92-1	1 kg Pb / kg
Water	(unspecified)	Manganese	007439-96-5	0,02 kg Pb / kg
Air	(unspecified)	Manganese	007439-96-5	1 kg Pb / kg
Water	(unspecified)	Mercury	007439-97-6	10 kg Pb / kg
Air	(unspecified)	Mercury	007439-97-6	1 kg Pb / kg
Water	(unspecified)	Metallic ions, unspecified		0,00222 3 kg Pb / kg
Air	(unspecified)	Metals, unspecified		0,03867 kg Pb / kg
Water	(unspecified)	Molybdenum	007439-98-7	0,14 kg Pb / kg
Water	(unspecified)	Nickel, ion	014701-22-5	0,5 kg Pb / kg
Impact Category	carcinogens	kg B(a)P		
Air	(unspecified)	Acrylonitrile	000107-13-1	0,00022 kg B(a)P / kg
Air	(unspecified)	Arsenic	007440-38-2	0,044 kg B(a)P / kg
Air	(unspecified)	Benzene	000071-43-2	0,00004 4 kg B(a)P / kg
Air	(unspecified)	Benzene, ethyl-	000100-41-4	0,00004 4 kg B(a)P / kg
Air	(unspecified)	Benzo(a)pyrene	000050-32-8	1 kg B(a)P / kg
Air	(unspecified)	Chromium VI	018540-29-9	0,44 kg B(a)P / kg
Air	(unspecified)	Ethene, chloro-	000075-01-4	0,00001 1 kg B(a)P / kg
Air	(unspecified)	Fluoranthene	000206-44-0	1 kg B(a)P / kg
Air	(unspecified)	Hydrocarbons, aromatic		0,00004 4 kg B(a)P / kg
Air	(unspecified)	Metals, unspecified		0,00017 9 kg B(a)P / kg
Air	(unspecified)	Nickel	007440-02-0	0,0044 kg B(a)P / kg
Air	(unspecified)	PAH, polycyclic aromatic hydrocarbons	130498-29-2	0,4792 kg B(a)P / kg
Air	(unspecified)	Tar	008007-45-2	0,00004 4 kg B(a)P / kg
Impact Category	winter smog - P.M.	kg SPM		
Air	(unspecified)	Carbon black	001333-86-4	1 kg SPM / kg
Air	(unspecified)	Iron dust		1 kg SPM / kg
Air	(unspecified)	Particulates, < 10 um		1 kg SPM / kg
Air	(unspecified)	Particulates, < 10 um (mobile)		1 kg SPM / kg
Air	(unspecified)	Particulates, < 10 um (stationary)		1 kg SPM / kg
Air	(unspecified)	Particulates, < 2.5 um		1 kg SPM / kg
Air	(unspecified)	Particulates, > 2.5 um, and < 10um		1 kg SPM / kg
Air	(unspecified)	Particulates, diesel soot		1 kg SPM / kg
Air	(unspecified)	Particulates, SPM		1 kg SPM / kg
Air	(unspecified)	Soot		1 kg SPM / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	08/08/2007 007446-09-5	<i>Period:</i> 16.11.31
Air	(unspecified)	Sulfur dioxide		1 kg SPM / kg
Air	(unspecified)	Sulfur oxides		1 kg SPM / kg
Impact Category	summer smog - VOCs	kg C2H4		
Air	(unspecified)	2-Propanol	000067-63-0	0,196 kg C2H4 / kg
Air	(unspecified)	Acetaldehyde	000075-07-0	0,527 kg C2H4 / kg
Air	(unspecified)	Acetone	000067-64-1	0,178 kg C2H4 / kg
Air	(unspecified)	Acetonitrile	000075-05-8	0,416 kg C2H4 / kg
Air	(unspecified)	Acrolein	000107-02-8	0,603 kg C2H4 / kg
Air	(unspecified)	Acrylonitrile	000107-13-1	0,416 kg C2H4 / kg
Air	(unspecified)	Alcohols, unspecified		0,196 kg C2H4 / kg
Air	(unspecified)	Aldehydes, unspecified		0,443 kg C2H4 / kg
Air	(unspecified)	Benzaldehyde	000100-52-7	0,334 kg C2H4 / kg
Air	(unspecified)	Benzene	000071-43-2	0,189 kg C2H4 / kg
Air	(unspecified)	Benzene, ethyl-	000100-41-4	0,593 kg C2H4 / kg
Air	(unspecified)	Benzo(a)pyrene	000050-32-8	0,761 kg C2H4 / kg
Air	(unspecified)	Biphenyl	000092-52-4	0,761 kg C2H4 / kg
Air	(unspecified)	Biphenyl, hexachloro-	026601-64-9	0,761 kg C2H4 / kg
Air	(unspecified)	Butane	000106-97-8	0,41 kg C2H4 / kg
Air	(unspecified)	Butene	025167-67-3	0,992 kg C2H4 / kg
Air	(unspecified)	Caprolactam	000105-60-2	0,761 kg C2H4 / kg
Air	(unspecified)	Chloroform	000067-66-3	0,021 kg C2H4 / kg
Air	(unspecified)	Crude oil		0,398 kg C2H4 / kg
Air	(unspecified)	Diethyl ether	000060-29-7	0,398 kg C2H4 / kg
Air	(unspecified)	Ethane	000074-84-0	0,082 kg C2H4 / kg
Air	(unspecified)	Ethane, 1,1,1-trichloro-, HCFC-140	000071-55-6	0,021 kg C2H4 / kg
Air	(unspecified)	Ethane, 1,2-dichloro-	000107-06-2	0,021 kg C2H4 / kg
Air	(unspecified)	Ethanol	000064-17-5	0,268 kg C2H4 / kg
Air	(unspecified)	Ethene	000074-85-1	1 kg C2H4 / kg
Air	(unspecified)	Ethene, chloro-	000075-01-4	0,021 kg C2H4 / kg
Air	(unspecified)	Ethene, tetrachloro-	000127-18-4	0,005 kg C2H4 / kg
Air	(unspecified)	Ethene, trichloro-	000079-01-6	0,021 kg C2H4 / kg
Air	(unspecified)	Ethylene glycol	000107-21-1	0,196 kg C2H4 / kg
Air	(unspecified)	Ethylene oxide	000075-21-8	0,377 kg C2H4 / kg
Air	(unspecified)	Ethyne	000074-86-2	0,168 kg C2H4 / kg
Air	(unspecified)	Formaldehyde	000050-00-0	0,421 kg C2H4 / kg
Air	(unspecified)	Heptane	000142-82-5	0,529 kg C2H4 / kg
Air	(unspecified)	Hexane	000110-54-3	0,421 kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aliphatic, alkanes, cyclic		0,398 kg C2H4 / kg

<i>SimaPro</i>			<i>08/08/200</i>		<i>Period: 16.11.31</i>
<i>7.1</i>	<i>Method</i>	<i>Data:</i>	<i>7</i>		
Air	(unspecified)	Hydrocarbons, aliphatic, alkanes, unspecified		0,398	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aliphatic, alkenes, unspecified		0,906	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aliphatic, unsaturated		0,398	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, aromatic		0,761	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, chlorinated		0,021	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, halogenated		0,021	kg C2H4 / kg
Air	(unspecified)	Hydrocarbons, unspecified		0,398	kg C2H4 / kg
Air	(unspecified)	Hydroxy compounds, unspecified		0,377	kg C2H4 / kg
Air	(unspecified)	Kerosene	064742-81-0	0,398	kg C2H4 / kg
Air	(unspecified)	Ketones, unspecified		0,326	kg C2H4 / kg
Air	(unspecified)	Methane	000074-82-8	0,007	kg C2H4 / kg
Air	(unspecified)	Methane, biogenic	000074-82-8	0,007	kg C2H4 / kg
Air	(unspecified)	Methane, dichloro-, HCC-30	000075-09-2	0,021	kg C2H4 / kg
Air	(unspecified)	Methane, fossil	000074-82-8	0,007	kg C2H4 / kg
Air	(unspecified)	Methane, tetrachloro-, CFC-10	000056-23-5	0,021	kg C2H4 / kg
Air	(unspecified)	Methanol	000067-56-1	0,123	kg C2H4 / kg
Air	(unspecified)	Methyl ethyl ketone	000078-93-3	0,473	kg C2H4 / kg
Air	(unspecified)	Methyl mercaptan	000074-93-1	0,377	kg C2H4 / kg
Air	(unspecified)	Naphthalene	000091-20-3	0,761	kg C2H4 / kg
Air	(unspecified)	NMVOOC, non-methane volatile organic compounds, unspecified origin		0,416	kg C2H4 / kg
Air	(unspecified)	PAH, polycyclic aromatic hydrocarbons	130498-29-2	0,04932	kg C2H4 / kg
Air	(unspecified)	Pentane	000109-66-0	0,408	kg C2H4 / kg
Air	(unspecified)	Petrol	008006-61-9	0,398	kg C2H4 / kg
Air	(unspecified)	Phenol	000108-95-2	0,761	kg C2H4 / kg
Air	(unspecified)	Phenol, chloro-	025167-80-0	0,021	kg C2H4 / kg
Air	(unspecified)	Phenol, pentachloro-	000087-86-5	0,021	kg C2H4 / kg
Air	(unspecified)	Phthalic anhydride	000085-44-9	0,761	kg C2H4 / kg
Air	(unspecified)	Propane	000074-98-6	0,42	kg C2H4 / kg
Air	(unspecified)	Propene	000115-07-1	1,03	kg C2H4 / kg
Air	(unspecified)	Propionic acid	000079-09-4	0,377	kg C2H4 / kg
Air	(unspecified)	Styrene	000100-42-5	0,761	kg C2H4 / kg
Air	(unspecified)	Tar	008007-45-2	0,416	kg C2H4 / kg
Air	(unspecified)	Terpentine		0,377	kg C2H4 / kg
Air	(unspecified)	Toluene	000108-88-3	0,563	kg C2H4 / kg
Air	(unspecified)	Vinyl acetate	000108-05-4	0,223	kg C2H4 / kg
Air	(unspecified)	VOC, volatile organic compounds		0,398	kg C2H4 / kg
Impact Category	pesticides	kg act.subst			
Water	(unspecified)	2,4-D	000094-75-7	1	kg act.subst / kg
Water	(unspecified)	2,4,5-T	000093-76-5	1	kg act.subst / kg
Water	(unspecified)	Acephate	030560-19-1	1	kg act.subst / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	<i>08/08/200</i> 7	<i>Period:</i> 16.11.31
Water	(unspecified)	Aldicarb	000116-06-3	1 kg act.subst / kg
Water	(unspecified)	Aldrin	000309-00-2	1 kg act.subst / kg
Water	(unspecified)	Anilazine	000101-05-3	1 kg act.subst / kg
Water	(unspecified)	Atrazine	001912-24-9	1 kg act.subst / kg
Water	(unspecified)	Azinphos-ethyl	002642-71-9	1 kg act.subst / kg
Water	(unspecified)	Azinphos-methyl	000086-50-0	1 kg act.subst / kg
Water	(unspecified)	Benomyl	017804-35-2	1 kg act.subst / kg
Water	(unspecified)	Bentazone	025057-89-0	1 kg act.subst / kg
Water	(unspecified)	Bifenthrin	082657-04-3	1 kg act.subst / kg
Water	(unspecified)	Bis(2-chloroethyl)ether	000111-44-4	1 kg act.subst / kg
Water	(unspecified)	Bis(chloromethyl)ether	000542-88-1	1 kg act.subst / kg
Water	(unspecified)	Captafol	002939-80-2	1 kg act.subst / kg
Water	(unspecified)	Captan	000133-06-2	1 kg act.subst / kg
Water	(unspecified)	Carbaryl	000063-25-2	1 kg act.subst / kg
Water	(unspecified)	Carbendazim	010605-21-7	1 kg act.subst / kg
Water	(unspecified)	Carbofuran	001563-66-2	1 kg act.subst / kg
Water	(unspecified)	Chlordane	012789-03-6	1 kg act.subst / kg
Water	(unspecified)	Chlorfenvinphos	000470-90-6	1 kg act.subst / kg
Water	(unspecified)	Chloridazon	001698-60-8	1 kg act.subst / kg
Water	(unspecified)	Chlorothalonil	001897-45-6	1 kg act.subst / kg
Water	(unspecified)	Chlorpropham	000101-21-3	1 kg act.subst / kg
Water	(unspecified)	Chlorpyrifos	002921-88-2	1 kg act.subst / kg
Water	(unspecified)	Coumafos	000056-72-4	1 kg act.subst / kg
Water	(unspecified)	Cyanazine	021725-46-2	1 kg act.subst / kg
Water	(unspecified)	Cypermethrin	052315-07-8	1 kg act.subst / kg
Water	(unspecified)	Cyromazine	066215-27-8	1 kg act.subst / kg
Water	(unspecified)	DDT	000050-29-3	1 kg act.subst / kg
Water	(unspecified)	Deltamethrin	052918-63-5	1 kg act.subst / kg
Water	(unspecified)	Demeton	008065-48-3	1 kg act.subst / kg
Water	(unspecified)	Desmetryn	001014-69-3	1 kg act.subst / kg
Water	(unspecified)	Diazinon	000333-41-5	1 kg act.subst / kg
Water	(unspecified)	Dichlorprop	000120-36-5	1 kg act.subst / kg
Water	(unspecified)	Dichlorvos	000062-73-7	1 kg act.subst / kg
Water	(unspecified)	Dieldrin	000060-57-1	1 kg act.subst / kg
Water	(unspecified)	Dimethoate	000060-51-5	1 kg act.subst / kg
Water	(unspecified)	Dinoseb	000088-85-7	1 kg act.subst / kg
Water	(unspecified)	Dinoterb	001420-07-1	1 kg act.subst / kg
Water	(unspecified)	Diquat dibromide	000085-	1 kg act.subst / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	08/08/2007 00-7	<i>Period:</i> 16.11.31
Water	(unspecified)	Disinfectants, unspecified		1 kg act.subst / kg
Water	(unspecified)	Disulfothon	000298-04-4	1 kg act.subst / kg
Water	(unspecified)	Diuron	000330-54-1	1 kg act.subst / kg
Water	(unspecified)	DNOC	000534-52-1	1 kg act.subst / kg
Water	(unspecified)	Endosulfan	000115-29-7	1 kg act.subst / kg
Water	(unspecified)	Endrin	000072-20-8	1 kg act.subst / kg
Water	(unspecified)	Ethoprop	013194-48-4	1 kg act.subst / kg
Water	(unspecified)	Fenitrothion	000122-14-5	1 kg act.subst / kg
Water	(unspecified)	Fenthion	000055-38-9	1 kg act.subst / kg
Water	(unspecified)	Fentin acetate	000900-95-8	1 kg act.subst / kg
Water	(unspecified)	Fentin chloride	000639-58-7	1 kg act.subst / kg
Water	(unspecified)	Fentin hydroxide	000076-87-9	1 kg act.subst / kg
Water	(unspecified)	Folpet	000133-07-3	1 kg act.subst / kg
Water	(unspecified)	Fungicides, unspecified		1 kg act.subst / kg
Water	(unspecified)	Glyphosate	001071-83-6	1 kg act.subst / kg
Water	(unspecified)	Heptachlor	000076-44-8	1 kg act.subst / kg
Water	(unspecified)	Heptenophos	023560-59-0	1 kg act.subst / kg
Water	(unspecified)	Herbicides, unspecified		1 kg act.subst / kg
Water	(unspecified)	Insecticides, unspecified		1 kg act.subst / kg
Water	(unspecified)	Iprodione	036734-19-7	1 kg act.subst / kg
Water	(unspecified)	Isoproturon	034123-59-6	1 kg act.subst / kg
Water	(unspecified)	Lindane	000058-89-9	1 kg act.subst / kg
Water	(unspecified)	Lindane, alpha-	000319-84-6	1 kg act.subst / kg
Water	(unspecified)	Lindane, beta-	000319-85-7	1 kg act.subst / kg
Water	(unspecified)	Linuron	000330-55-2	1 kg act.subst / kg
Water	(unspecified)	Malathion	000121-75-5	1 kg act.subst / kg
Water	(unspecified)	Maneb	012427-38-2	1 kg act.subst / kg
Water	(unspecified)	MCPA	000094-74-6	1 kg act.subst / kg
Water	(unspecified)	Mecoprop	000093-65-2	1 kg act.subst / kg
Water	(unspecified)	Metamitron	041394-05-2	1 kg act.subst / kg
Water	(unspecified)	Metazachlor	067129-08-2	1 kg act.subst / kg
Water	(unspecified)	Methabenzthiazuron	018691-97-9	1 kg act.subst / kg
Water	(unspecified)	Methomyl	016752-77-5	1 kg act.subst / kg
Water	(unspecified)	Metobromuron	003060-89-7	1 kg act.subst / kg
Water	(unspecified)	Metolachlor	051218-45-2	1 kg act.subst / kg
Water	(unspecified)	Metribuzin	021087-64-9	1 kg act.subst / kg
Water	(unspecified)	Mevinfos	007786-34-7	1 kg act.subst / kg
Water	(unspecified)	Monolinuron	001746-81-2	1 kg act.subst / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	<i>08/08/2007</i>	<i>Period:</i>	<i>16.11.31</i>
Water	(unspecified)	Oxamyl	023135-22-0	1	kg act.subst / kg
Water	(unspecified)	Oxydemethon methyl	000301-12-2	1	kg act.subst / kg
Water	(unspecified)	Parathion	000056-38-2	1	kg act.subst / kg
Water	(unspecified)	Parathion, methyl	000298-00-0	1	kg act.subst / kg
Water	(unspecified)	Permethrin	052645-53-1	1	kg act.subst / kg
Water	(unspecified)	Pesticides, unspecified		1	kg act.subst / kg
Water	(unspecified)	Phoxim	014816-18-3	1	kg act.subst / kg
Water	(unspecified)	Pirimicarb	023103-98-2	1	kg act.subst / kg
Water	(unspecified)	Propachlor	001918-16-7	1	kg act.subst / kg
Water	(unspecified)	Propoxur	000114-26-1	1	kg act.subst / kg
Water	(unspecified)	Pyrazophos	013457-18-6	1	kg act.subst / kg
Water	(unspecified)	Simazine	000122-34-9	1	kg act.subst / kg
Water	(unspecified)	Thiram	000137-26-8	1	kg act.subst / kg
Water	(unspecified)	Tolclophos-methyl	057018-04-9	1	kg act.subst / kg
Water	(unspecified)	Triallate	002303-17-5	1	kg act.subst / kg
Water	(unspecified)	Triazofos	024017-47-8	1	kg act.subst / kg
Water	(unspecified)	Trichlorfon	000052-68-6	1	kg act.subst / kg
Water	(unspecified)	Trifluralin	001582-09-8	1	kg act.subst / kg
Water	(unspecified)	Zineb	012122-67-7	1	kg act.subst / kg
Impact Category	energy resources	MJ LHV			
Prima	(unspecified)	Biomass, feedstock		1	MJ LHV / MJ
Prima	(unspecified)	Coal, 18 MJ per kg, in ground		18	MJ LHV / kg
Prima	(unspecified)	Coal, 26.4 MJ per kg, in ground		26,4	MJ LHV / kg
Prima	(unspecified)	Coal, 29.3 MJ per kg, in ground		29,3	MJ LHV / kg
Prima	(unspecified)	Coal, brown, 10 MJ per kg, in ground		10	MJ LHV / kg
Prima	(unspecified)	Coal, brown, 8 MJ per kg, in ground		8	MJ LHV / kg
Prima	(unspecified)	Coal, brown, in ground		10	MJ LHV / kg
Prima	(unspecified)	Coal, feedstock, 26.4 MJ per kg, in ground		26,4	MJ LHV / kg
Prima	(unspecified)	Coal, hard, unspecified, in ground		19,1	MJ LHV / kg
Prima	(unspecified)	Energy, from biomass		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from coal		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from coal, brown		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from gas, natural		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from hydro power		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from hydrogen		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from oil		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from peat		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from sulfur		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from uranium		1	MJ LHV / MJ
Prima	(unspecified)	Energy, from wood		1	MJ LHV / MJ
Prima	(unspecified)	Energy, geothermal		1	MJ LHV / MJ
Prima	(unspecified)	Energy, gross calorific value, in biomass		1	MJ LHV / MJ
Prima	(unspecified)	Energy, kinetic, flow, in wind		1	MJ LHV / MJ
Prima	(unspecified)	Energy, potential, stock, in barrage water		1	MJ LHV / MJ
Prima	(unspecified)	Energy, recovered		1	MJ LHV / MJ

<i>SimaPro</i>			<i>08/08/200</i>		<i>Period:</i>	<i>16.11.31</i>
<i>7.1</i>	<i>Method</i>	<i>Data:</i>	<i>7</i>			
Prima	(unspecified)	Energy, solar			1	MJ LHV / MJ
Prima	(unspecified)	Energy, unspecified			1	MJ LHV / MJ
Prima	(unspecified)	Gas, mine, off-gas, process, coal mining/kg	008006-14-2	49,8		MJ LHV / kg
Prima	(unspecified)	Gas, mine, off-gas, process, coal mining/m3	008006-14-2	39,8		MJ LHV / m3
Prima	(unspecified)	Gas, natural, 30.3 MJ per kg, in ground	008006-14-2	30,3		MJ LHV / kg
Prima	(unspecified)	Gas, natural, 35 MJ per m3, in ground	008006-14-2	35		MJ LHV / m3
Prima	(unspecified)	Gas, natural, 36.6 MJ per m3, in ground	008006-14-2	36,6		MJ LHV / m3
Prima	(unspecified)	Gas, natural, 46.8 MJ per kg, in ground	008006-14-2	46,8		MJ LHV / kg
Prima	(unspecified)	Gas, natural, feedstock, 35 MJ per m3, in ground	008006-14-2	35		MJ LHV / m3
Prima	(unspecified)	Gas, natural, feedstock, 46.8 MJ per kg, in ground	008006-14-2	46,8		MJ LHV / kg
Prima	(unspecified)	Gas, natural, in ground	008006-14-2	38,3		MJ LHV / m3
Prima	(unspecified)	Gas, off-gas, oil production, in ground	008006-14-2	40,9		MJ LHV / m3
Prima	(unspecified)	Gas, petroleum, 35 MJ per m3, in ground		35		MJ LHV / m3
Prima	(unspecified)	Methane	000074-82-8	35,9		MJ LHV / kg
Prima	(unspecified)	Oil, crude, 38400 MJ per m3, in ground		38400		MJ LHV / m3
Prima	(unspecified)	Oil, crude, 41 MJ per kg, in ground		41		MJ LHV / kg
Prima	(unspecified)	Oil, crude, 42 MJ per kg, in ground		42		MJ LHV / kg
Prima	(unspecified)	Oil, crude, 42.6 MJ per kg, in ground		42,6		MJ LHV / kg
Prima	(unspecified)	Oil, crude, 42.7 MJ per kg, in ground		42,7		MJ LHV / kg
Prima	(unspecified)	Oil, crude, feedstock, 41 MJ per kg, in ground		41		MJ LHV / kg
Prima	(unspecified)	Oil, crude, feedstock, 42 MJ per kg, in ground		42		MJ LHV / kg
Prima	(unspecified)	Oil, crude, in ground		45,8		MJ LHV / kg
Prima	(unspecified)	Peat, in ground		13		MJ LHV / kg
Prima	(unspecified)	Steam from waste incineration		1		MJ LHV / MJ
Prima	(unspecified)	Uranium ore, 1.11 GJ per kg, in ground		1110		MJ LHV / kg
Prima	(unspecified)	Uranium, 2291 GJ per kg, in ground	007440-61-1	2291000		MJ LHV / kg
Prima	(unspecified)	Uranium, 451 GJ per kg, in ground	007440-61-1	451000		MJ LHV / kg
Prima	(unspecified)	Uranium, 560 GJ per kg, in ground	007440-61-1	560000		MJ LHV / kg
Prima	(unspecified)	Uranium, in ground	007440-61-1	560000		MJ LHV / kg
Prima	(unspecified)	Water, barrage		0,01		MJ LHV / kg
Prima	(unspecified)	Wood and wood waste, 9.5 MJ per kg		9,5		MJ LHV / kg
Prima	(unspecified)	Wood, feedstock		15,3		MJ LHV / kg
Prima	(unspecified)	Wood, unspecified, standing/kg		15,3		MJ LHV / kg
Impact Category	solid waste	kg				
Waste	(unspecified)	Aluminium waste		1		kg / kg
Waste	(unspecified)	Asbestos		1		kg / kg
Waste	(unspecified)	Asphalt waste		1		kg / kg
Waste	(unspecified)	Bilge oil		1		kg / kg
Waste	(unspecified)	Bitumen waste		1		kg / kg
Waste	(unspecified)	Bulk waste, unspecified		1		kg / kg
Waste	(unspecified)	Calcium fluoride waste		1		kg / kg
Waste	(unspecified)	Cardboard waste		1		kg / kg
Waste	(unspecified)	Carton waste		1		kg / kg
Waste	(unspecified)	Catalyst waste		1		kg / kg
Waste	(unspecified)	Cathode iron ingots waste		1		kg / kg
Waste	(unspecified)	Cathode loss		1		kg / kg

<i>SimaPro</i>			<i>08/08/200</i>	<i>Period:</i>
<i>7.1</i>	<i>Method</i>	<i>Data:</i>	<i>7</i>	<i>16.11.31</i>
Waste	(unspecified)	Chemical waste, inert	1	kg / kg
Waste	(unspecified)	Chemical waste, regulated	1	kg / kg
Waste	(unspecified)	Chemical waste, unspecified	1	kg / kg
Waste	(unspecified)	Chromium waste	1	kg / kg
Waste	(unspecified)	Coal ash	1	kg / kg
Waste	(unspecified)	Coal tailings	1	kg / kg
Waste	(unspecified)	Construction waste	1	kg / kg
Waste	(unspecified)	Copper absorbent waste	1	kg / kg
Waste	(unspecified)	Copper waste	1	kg / kg
Waste	(unspecified)	Dross	1	kg / kg
Waste	(unspecified)	Dross for recycling	1	kg / kg
Waste	(unspecified)	Dust, break-out	1	kg / kg
Waste	(unspecified)	Dust, unspecified	1	kg / kg
Waste	(unspecified)	E-saving bulb plastic waste	1	kg / kg
Waste	(unspecified)	E-saving bulb waste	1	kg / kg
Waste	(unspecified)	Electronic waste	1	kg / kg
Waste	(unspecified)	Electrostatic filter dust	1	kg / kg
Waste	(unspecified)	Fluoride waste	1	kg / kg
Waste	(unspecified)	Fly ash	1	kg / kg
Waste	(unspecified)	Gas pipe waste	1	kg / kg
Waste	(unspecified)	Glass waste	1	kg / kg
Waste	(unspecified)	Ion exchanger sludge	1	kg / kg
Waste	(unspecified)	Iron waste	1	kg / kg
Waste	(unspecified)	Light bulb waste	1	kg / kg
Waste	(unspecified)	Limestone waste	1	kg / kg
Waste	(unspecified)	Metal waste	1	kg / kg
Waste	(unspecified)	Mineral waste	1	kg / kg
Waste	(unspecified)	Mineral waste, from mining	1	kg / kg
Waste	(unspecified)	Mineral wool waste	1	kg / kg
Waste	(unspecified)	Oil separator sludge	1	kg / kg
Waste	(unspecified)	Oil waste	1	kg / kg
Waste	(unspecified)	Packaging waste, paper and board	1	kg / kg
Waste	(unspecified)	Packaging waste, plastic	1	kg / kg
Waste	(unspecified)	Packaging waste, steel	1	kg / kg
Waste	(unspecified)	Packaging waste, unspecified	1	kg / kg
Waste	(unspecified)	Packaging waste, wood	1	kg / kg
Waste	(unspecified)	Paint waste	1	kg / kg
Waste	(unspecified)	Photovoltaic cell waste	1	kg / kg
Waste	(unspecified)	Photovoltaic panel waste	1	kg / kg
Waste	(unspecified)	Photovoltaic production waste	1	kg / kg
Waste	(unspecified)	Photovoltaic/EVA cell waste	1	kg / kg
Waste	(unspecified)	Plastic waste	1	kg / kg
Waste	(unspecified)	Polyethylene waste	1	kg / kg
Waste	(unspecified)	Polystyrene waste	1	kg / kg
Waste	(unspecified)	Polyvinyl chloride waste	1	kg / kg
Waste	(unspecified)	Printed circuitboards waste	1	kg / kg
Waste	(unspecified)	Process waste	1	kg / kg
Waste	(unspecified)	Production waste	1	kg / kg
Waste	(unspecified)	Production waste, not inert	1	kg / kg
Waste	(unspecified)	Propylene glycol waste	1	kg / kg
Waste	(unspecified)	Refinery sludge	1	kg / kg
Waste	(unspecified)	Rejects	1	kg / kg
Waste	(unspecified)	Rejects, corrugated cardboard	1	kg / kg
Waste	(unspecified)	Residues	1	kg / kg

<i>SimaPro</i>			<i>08/08/200</i>	<i>Period:</i>	<i>16.11.31</i>
<i>7.1</i>	<i>Method</i>	<i>Data:</i>	<i>7</i>		
Waste	(unspecified)	Slags		1	kg / kg
Waste	(unspecified)	Slags and ashes		1	kg / kg
Waste	(unspecified)	Sludge		1	kg / kg
Waste	(unspecified)	Soot		1	kg / kg
Waste	(unspecified)	Steel waste		1	kg / kg
Waste	(unspecified)	Stones and rubble		1	kg / kg
Waste	(unspecified)	Tin waste		1	kg / kg
Waste	(unspecified)	Tinder from rolling drum		1	kg / kg
Waste	(unspecified)	Waste in bioactive landfill		1	kg / kg
Waste	(unspecified)	Waste in incineration		1	kg / kg
Waste	(unspecified)	Waste in inert landfill		1	kg / kg
Waste	(unspecified)	Waste to recycling		1	kg / kg
Waste	(unspecified)	Waste, final, inert		1	kg / kg
Waste	(unspecified)	Waste, from drilling, unspecified		1	kg / kg
Waste	(unspecified)	Waste, from incinerator		1	kg / kg
Waste	(unspecified)	Waste, industrial		1	kg / kg
Waste	(unspecified)	Waste, inorganic		1	kg / kg
Waste	(unspecified)	Waste, nuclear, unspecified/kg		1	kg / kg
Waste	(unspecified)	Waste, solid		1	kg / kg
Waste	(unspecified)	Waste, toxic		1	kg / kg
Waste	(unspecified)	Waste, unspecified		1	kg / kg
Waste	(unspecified)	Welding dust		1	kg / kg
Waste	(unspecified)	Wood ashes		1	kg / kg
Waste	(unspecified)	Wood waste		1	kg / kg
Waste	(unspecified)	Wood, sawdust		1	kg / kg
Waste	(unspecified)	Zeolite waste		1	kg / kg
Waste	(unspecified)	Zinc waste		1	kg / kg
Impact					
Category	Heavy metals (air)	kg Ni eq			
Air	(unspecified)	Arsenic	007440-38-2	3,33	kg Ni eq / kg
Air	(unspecified)	Cadmium	007440-43-9	5	kg Ni eq / kg
Air	(unspecified)	Chromium	007440-47-3	0,5	kg Ni eq / kg
Air	(unspecified)	Chromium-51	014392-02-0	0,5	kg Ni eq / kBq
Air	(unspecified)	Chromium VI	018540-29-9	0,5	kg Ni eq / kg
Air	(unspecified)	Copper	007440-50-8	0,5	kg Ni eq / kg
Air	(unspecified)	Lead	007439-92-1	0,04	kg Ni eq / kg
Air	(unspecified)	Mercury	007439-97-6	5	kg Ni eq / kg
Air	(unspecified)	Nickel	007440-02-0	1	kg Ni eq / kg
Air	(unspecified)	Zinc	007440-66-6	0,04	kg Ni eq / kg
Impact					
Category	PAHs (air)	kg PAH/20 eq			
Air	(unspecified)	Carbon monoxide	000630-08-0	0,00000	kg PAH/20 eq / kg
Air	(unspecified)	Hydrocarbons, aromatic, naphthalenes, C13, trisubstituted		20	kg PAH/20 eq / kg
Air	(unspecified)	Hydrocarbons, aromatic, styrenes, C10		20	kg PAH/20 eq / kg
Air	(unspecified)	Hydrocarbons, aromatic, styrenes, C9		20	kg PAH/20 eq / kg
Air	(unspecified)	Polycyclic organic matter, as 15-PAH		20	kg PAH/20 eq / kg
Air	(unspecified)	Polycyclic organic matter, as 7-PAH		20	kg PAH/20 eq / kg

<i>SimaPro</i> 7.1	<i>Method</i>	<i>Data:</i>	08/08/200 7	<i>Period:</i> 16.11.31
Air	(unspecified)	Polycyclic organic matter, unspecified		kg kg PAH/20 eq / 20 kg
Impact Category	Heavy metals (water)	kg Hg/20 eq		
Water	(unspecified)	Arsenic, ion	017428- 41-0	3 kg Hg/20 eq / kg
Water	(unspecified)	Cadmium, ion	022537- 48-0	7 kg Hg/20 eq / kg
Water	(unspecified)	Chromium	007440- 47-3	0,4 kg Hg/20 eq / kg
Water	(unspecified)	Copper, ion	017493- 86-6	2,8 kg Hg/20 eq / kg
Water	(unspecified)	Lead	007439- 92-1	0,5 kg Hg/20 eq / kg
Water	(unspecified)	Mercury	007439- 97-6	20 kg Hg/20 eq / kg
Water	(unspecified)	Nickel	007440- 02-0	7 kg Hg/20 eq / kg
Water	(unspecified)	Zinc	007440- 66-6	0,2 kg Hg/20 eq / kg
Water	(unspecified)	Zinc, ion	023713- 49-7	0,2 kg Hg/20 eq / kg
Impact Category	POP (air)	kg TE eq		
Air	(unspecified)	Dioxin, 1,2,3,7,8,9-hexachlorodibenzo-	019408- 74-3	0,1 kg TE eq / kg
Air	(unspecified)	Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin		1 kg TE eq / kg
Air	(unspecified)	Furan	000110- 00-9	0,1 kg TE eq / kg
Impact Category	POP (water)	kg TE eq		
Water	(unspecified)	Dioxin, 1,2,3,7,8,9-hexachlorodibenzo-	019408- 74-3	0,1 kg TE eq / kg
Water	(unspecified)	Dioxins, measured as 2,3,7,8-tetrachlorodibenzo-p-dioxin		1 kg TE eq / kg
Water	(unspecified)	Furan	000110- 00-9	0,1 kg TE eq / kg
Normalizati on- Weighting set	Europe g			
Normalizza zione				
greenhouse	7,42E-05			
ozone layer	1,24			
acidificatio n	0,00888			
eutrophicati on	0,0262			
heavy metals	17,8			
carcinogens	106			
winter smog - P.M.	0,0106			
summer smog - VOCs	0,0507			
pesticides	1,21			
energy resources	6,29E-06			
solid waste	0			
Heavy metals (air)	0			
PAHs (air)	0			

SimaPro

7.1

Method

Data:

08/08/200

7

Period: 16.11.31

Heavy metals (water) 0
POP (air) 0
POP (water) 0

Weight
greenhouse 2,5
ozone layer acidification 100
eutrophication 10
heavy metals 5
carcinogens 5
winter smog - P.M. 10
summer smog - VOCs 5
pesticides 2,5
energy resources 25
solid waste 0
Heavy metals (air) 0
PAHs (air) 0
Heavy metals (water) 0
POP (air) 0
POP (water) 0

Normalization-Weighting set Europe e

Normalizzazione
greenhouse 7,65E-05
ozone layer acidification 1,08
eutrophication 0,00888
heavy metals 0,0262
carcinogens 18,4
winter smog - P.M. 92
summer smog - VOCs 0,0106
pesticides 0,0558
energy resources 1,04
solid waste 6,29E-06
Heavy metals (air) 0
PAHs (air) 18,4
Heavy metals 92
Heavy metals 18,4

<i>SimaPro</i>	<i>Method</i>	<i>Data:</i>	<i>08/08/200</i>	<i>Period: 16.11.31</i>
7.1			7	
(water)				
POP (air)		0		
POP (water)		0		
Weight				
greenhouse		2,5		
ozone layer acidification		100		
eutrophication		10		
heavy metals		5		
carcinogens		5		
winter smog - P.M.		10		
summer smog - VOCs		5		
pesticides energy resources		2,5		
solid waste		25		
Heavy metals (air)		0		
PAHs (air)		0		
Heavy metals (water)		5		
POP (air)		0		
POP (water)		0		

A.4 SIMAPRO VS EUP-ECOREPORT OUTPUT

According to “MEUUP Report” by R. Kemna on methodology used in the EuP-Ecoreport method, it was possible to have SimaPro outputs in compliance with EuP ones (MEEuP Methodology Report, Final, table 25 and Eco-indicator 95 - rev EuP V2.03).

In 8.4 Eco-indicator 95 - rev EuP V2.03 methodology was fully reported, while in the following table the main indicators used for Simapro outputs, in compliance with EuP- Ecoreport outputs, were reported.

Table A.17: Output indicators in Ecoindicator95-rev EuP method

Eco-indicator 95 - rev EuP V2.03 (Revised by Laura Cutaia)

<i>Environmental impact</i>	<i>Unit</i>
greenhouse	kg CO2
ozone layer	kg CFC11
acidification	kg SO2
eutrophication	kg PO4
heavy metals	kg Pb
carcinogens	kg B(a)P
winter smog - P.M.	kg SPM
summer smog - VOCs	kg C2H4
pesticides	kg act.subst
energy resources	MJ LHV

<i>Environmental impact</i>	<i>Unit</i>
solid waste	kg
Heavy metals (air)	kg Ni eq
PAHs (air)	kg PAH/20 eq
Heavy metals (water)	kg Hg/20 eq
POP (air)	kg TE eq
POP (water)	kg TE eq

Hereinafter outputs from COLD 7 have been reported, using SimaPro SW and revised Ecoindicator 95 methodology explained before.

In summary using SimaPro it was possible:

- To use quite all inventory data from producers (BOM) ;
- To use data input in the software in compliance with that available by producers (SimaPro data base contains many more data than EuP and makes possible the “simulation” of new record with new “components” or “materials” – as for detergents and washing agents according to data from producers) ;
- To have compliance between outputs from characterization phase of Eco-Indicator 95 (one of the most used methodology in impact assessment) and EuP-Ecoreport outputs, according to the “characterization factors” used in this method (MEEuP by R. Kemna) . See following figure.

Figure A.1: MEEuP Report – Summary of MEEUP weighting factors used to adapting Ecoindicator 95 to EuP-Ecoreport evaluating method.

Table 25. Summary MEEUP weighting factors

GHG emissions (air)	CO ₂	CO	N ₂ O	CH ₄	CF ₄	C ₂ F ₆	SF ₆	R134a	other		
weighting → CO ₂ eq. GWP-100	1	1.57	296	21	6500	9200	22200	1300	IPCC		
Acidification emissions (air)	SO _x	NO _x	N ₂ O	NH ₃	HF	HCl	H ₂ S	H ₂ SO ₄			
AP weighting → SO ₂ equivalent	1	0.7	1.78	1.88	1.6	0.88	1.88	0.65			
Heavy Metals (air)	Cd	Hg	As	HMU	Ni	Cr	Cu	Pb	Zn	MU	
HM weighting → Ni eq.	5	5	3.33	2	1	0.5	0.5	0.04	0.04	0.01	
PAHs (air)	PAHs	C6H6	CO								
HM weighting → Ni eq.	20	0.004	0.000002								
Heavy Metals (water)	Hg	Cd	Ni*	As	HMU	Cu*	Pb*	Cr	Zn		
HM Weighting factor → Hg/20 eq.	20	7	7	3	3	2.8	0.5	0.4	0.2		
Eutrophication (water)	P	P ₂ O ₅	PO ₄	N	NH ₄ ⁺	NO ₃ ⁻	BOD	Suspended Solids	DOC	TOC	COD
EP weighting → PO ₄ equivalent	3.07	1.34	1	0.42	0.33	0.1	0.11	0.08	0.066	0.066	0.05

EC Directives and official EU references with threshold and conversion values from which the weighting factors are derived: IPCC (GWP), EC 850/2004 (POP), 2001/81/EC (SO_x, NO_x, NH₃, VOC), 1999/30/EC (SO₂, NO_x, PM and Pb), 2000/69/EC (aromatics, CO), COM(2003)423 (As, Cd, Hg, Ni, PAHs), 1999/13/EC & 2002/3/EC (VOC), EC 2037/2000 (ODP), 91/271/EC & 98/15/EEC (BOD, COD, P, N, susp. Solids to water), 76/464/EEC (Metals etc. to water).

MU= Metals Unspecified
HMU= Heavy Metals Unspecified. *=preliminary factors

In any case in SimaPro it was not possible to “simulate” the distribution phase for final products, for lack of data from producers or from other sources; on the contrary in EuP-Ecoreport simulation of impacts due to distribution is considered by an “internal system”.

In the following table outputs for COLD 7 base model have been reported. In order to compare it with that from EuP-Ecoreport outputs it has to be underlined:

- “COLD 7 assembling” in Simapro corresponds to “Production total” in EuP; “assembling” for Simapro includes materials production, transport, forming and assembling also if these items have been calculated separately as in the outputs in 8.6;

- “Electricity LV use UCPTE U”+ “Delivery van (<3.5t) B250” + “COLD 7 Use consumables (per LC)” corresponds to “Use” in EuP;
- “COLD7 EoL” corresponds to “End of Life”.

According to the methodology described and to the correspondence of the outputs (as in the first row - Row in EuP-Ecoreport) it has been possible to render comparable the SimaPro and EuP-Ecoreport outputs.

The main results are in the following table (LCA output by SimaPro according to Ecoindicator 95).

Table A.18: COLD 7 – LCA output (Ecoindicator95-rev EuP method)

Row in EuP-Ecoreport	Impact category	Unit	Total	COLD7 assembling	Electricity LV use UCPTE U	Delivery van (<3.5t) B250	cold 7 EoL	cold 7 use materials (per LC)
14	greenhouse	kg CO2	3.626,95	600,20	2.815,55	0,54	-59,43	270,09
15	ozone layer	kg CFC11	0,00	0,00	0,00	0,00	-0,00	0,00
16	acidification	kg SO2	29,37	6,29	20,51	0,00	-0,26	2,83
22	eutrophication	kg PO4	1,09	0,29	0,69	0,00	-0,02	0,13
	heavy metals	kg Pb	0,03	0,01	0,02	0,00	-0,00	0,00
	carcinogens	kg B(a)P	0,00	0,00	0,00	0,00	-0,00	0,00
20	winter smog - P.M.	kg SPM	24,13	4,89	17,19	0,00	-0,16	2,20
17	summer smog - VOCs	kg C2H4	1,11	0,37	0,63	0,00	-0,07	0,17
	pesticides	kg act.subst	0,00	0,00	0,00	0,00	0,00	0,00
8	energy resources	MJ LHV	82.304,50	11.512,99	66.711,95	6,94	-1.108,22	5.180,84
12 (+13)	solid waste	kg	520,15	331,22	85,00	0,00	-45,12	149,05
19	Heavy metals (air)	kg Ni eq	0,01	0,00	0,01	0,00	-0,00	0,00
19,1	PAHs (air)	kg PAH/20 eq	0,00	0,00	0,00	0,00	-0,00	0,00
21	Heavy metals (water)	kg Hg/20 eq	0,03	0,00	0,03	0,00	-0,00	0,00
18	POP (air)	kg TE eq	0,00	0,00	0,00	0,00	0,00	0,00
23	POP (water)	kg TE eq	0	0	0	0	0	0

In the following table the same LCA output by SimaPro according to Ecoindicator 95, revised accordingly to EuP-Ecoreports outputs, is reported.

Table A.19: COLD 7– LCA output (Ecoindicator95-rev EuP method) adapted to them of EuP-Ecoreport

Row in EuP-Ecoreport	Impact category	Unit	COLD7 assembling	Use	cold 7 EoL	Total	Total - EoL
8	energy resources	MJ LHV	11513	71900	-1108	82304	83413
12 (+13)	solid waste	kg	331,22	235,05	-45,12	520,15	566,27
14	greenhouse	kg CO2	600,20	3086,19	-59,43	3626,95	3686,38
15	ozone layer	kg CFC11	6,36E-04	2,11E-03	-2,77E-05	2,72E-03	2,75E-03
16	acidification	kg SO2	6,29	23,34	-0,26	29,37	29,64
17	summer smog - VOCs	kg C2H4	0,373	0,802	-0,068	1,107	1,175

18	POP (air)	kg TE eq	1,52E-09	1,28E-09	4,60E-11	2,85E-09	2,81E-09
19	Heavy metals (air)	kg Ni eq	6,82E-04	5,65E-03	-1,83E-05	6,32E-03	6,34E-03
19,1	PAHs (air)	kg PAH/20 eq	2,13E-06	2,77E-06	-7,91E-07	4,11E-06	4,90E-06
20	winter smog - P.M.	kg SPM	4,89	19,40	-0,16	24,13	24,29
21	Heavy metals (water)	kg Hg/20 eq	4,82E-03	3,07E-02	-8,49E-04	3,46E-02	3,55E-02
22	eutrophication	kg PO4	0,29	0,82	-0,02	1,09	1,11
23	POP (water)	kg TE eq	0	0	0	0	0
	heavy metals	kg Pb	0,005028606	0,024384899	-0,000358783	0,029054722	0,029413505
	carcinogens	kg B(a)P	3,05035E-05	8,14643E-05	-4,2362E-05	6,96059E-05	0,000111968
	pesticides	kg act.subst	0	0	0	0	0

In the following table, outputs by EuP-Ecoreport method has been reported, in a comparable way.

Table A.20: COLD 7 – LCA output from EuP-Ecoreport

			Production	Distribution	Use	End of Life	Total	Total - EoL - Distribution
8	Total Energy (GER)	MJ	4669	1115	49414	-459	54738	54082
12 (+13)	waste	kg	85,41	0,58	59,18	5,98	151,13	144,58
14	Greenhouse Gases in GWP100	kg CO2 eq.	257,00	67,00	2158,00	10,00	2493,00	2416,00
15	Ozone Depletion, emissions	mg R-11 eq.						0
16	Acidification, emissions	kg SO2 eq.	2,03	0,21	12,72	0,03	14,99	14,76
17	Volatile Organic Compounds (VOC)	kg	0,006	0,016	0,019	0,003	0,045	0,026
18	Persistent Organic Pollutants (POP)	kg i-Teq	4,08E-10	3E-12	3,27E-10	2,6E-11	7,65E-10	7,36E-10
19	Heavy Metals	kg Ni eq.	1,07E-03	2,90E-05	8,67E-04	1,29E-04	2,09E-03	1,94E-03
19,1	PAHs	kg Ni eq.	1,41E-03	3,70E-05	1,21E-04	-3,00E-06	1,57E-03	1,54E-03
20	Particulate Matter (PM, dust)	kg	0,46	2,68	0,44	0,98	4,55	0,90
21	Heavy Metals	kg Hg/20	9,88E-04	1,00E-06	3,28E-04	3,10E-05	1,35E-03	1,32E-03
22	Eutrophication	kg PO4	0,061	0	0,002	0	0,063	0,063
23	Persistent Organic Pollutants (POP)	ng i-Teq						0

A.5 SIMAPRO OUTPUTS

Table A.21: COLD 7 – Assembling phase – Output of SimaPro with “Ecoindicator 95 rev EuP method”

<i>Impact category</i>	<i>greenhouse use</i>	<i>ozone layer</i>	<i>acidification</i>	<i>eutrophication</i>	<i>heavy metals</i>	<i>carcinogens</i>	<i>winter smog - P.M.</i>	<i>summer smog - VOCs</i>	<i>pesticides</i>	<i>energy resources</i>	<i>solid waste</i>	<i>Heavy metals (air)</i>	<i>PAHs (air)</i>	<i>Heavy metals (water)</i>	<i>POP (air)</i>	<i>POP (water)</i>
Unit	kg CO2	kg CFC11	kg SO2	kg PO4	kg Pb	kg B(a)P	kg SPM	kg C2H4	kg act.subst	MJ LHV	kg	kg Ni eq	kg PAH/20 eq	kg Hg/20 eq	kg TE eq	kg TE eq
Total	6,00E+02	6,36E-04	6,29E+00	2,88E-01	5,03E-03	3,05E-05	4,89E+00	3,73E-01	0,00E+00	1,15E+04	3,31E+02	6,82E-04	2,13E-06	4,82E-03	1,52E-09	0,00E+00
Crude iron I	1,77E+01	8,19E-08	1,84E-01	1,64E-02	1,94E-04	1,16E-05	1,13E-01	8,48E-03	0,00E+00	4,01E+02	4,00E+00	3,31E-05	7,25E-07	2,56E-05	2,09E-14	0,00E+00
Crude iron I	8,23E-01	3,82E-09	8,57E-03	7,66E-04	9,02E-06	5,41E-07	5,26E-03	3,95E-04	0,00E+00	1,87E+01	1,86E-01	1,54E-06	3,37E-08	1,19E-06	9,72E-16	0,00E+00
Steel I	7,88E-03	3,65E-11	7,51E-05	6,68E-06	1,64E-07	5,34E-09	4,92E-05	3,56E-06	0,00E+00	1,55E-01	8,40E-05	2,39E-08	4,96E-10	1,30E-08	7,35E-13	0,00E+00
X5CrNi18 (304) I	3,32E+00	6,34E-09	1,29E-01	1,16E-03	1,14E-05	3,61E-07	1,27E-01	4,23E-04	0,00E+00	4,81E+01	1,11E-02	1,66E-06	3,42E-08	1,49E-06	4,95E-11	0,00E+00
Steel I	3,74E+00	1,74E-08	3,57E-02	3,18E-03	7,80E-05	2,54E-06	2,34E-02	1,69E-03	0,00E+00	7,39E+01	3,99E-02	1,14E-05	2,36E-07	6,16E-06	3,49E-10	0,00E+00
Steel I	1,54E+00	7,16E-09	1,47E-02	1,31E-03	3,22E-05	1,05E-06	9,65E-03	6,97E-04	0,00E+00	3,05E+01	1,65E-02	4,69E-06	9,73E-08	2,54E-06	1,44E-10	0,00E+00
Steel I	1,03E+01	4,80E-08	9,87E-02	8,78E-03	2,15E-04	7,01E-06	6,46E-02	4,67E-03	0,00E+00	2,04E+02	1,10E-01	3,14E-05	6,52E-07	1,70E-05	9,66E-10	0,00E+00
Aluminium rec. I	1,81E+00	0,00E+00	3,03E-02	3,94E-04	4,14E-09	1,49E-10	2,97E-02	2,29E-03	0,00E+00	2,40E+01	2,67E-01	1,89E-07	3,35E-09	0,00E+00	0,00E+00	0,00E+00
Copper I	1,44E+01	8,92E-10	1,32E+00	6,10E-03	2,17E-07	9,93E-10	1,29E+00	5,30E-04	0,00E+00	1,81E+02	2,56E+02	6,49E-08	1,24E-08	1,41E-07	2,27E-16	0,00E+00
Zinc I	7,96E-01	5,04E-08	1,11E-02	3,86E-04	8,28E-06	2,22E-08	9,35E-03	1,52E-04	0,00E+00	1,07E+01	1,71E-01	1,76E-06	7,41E-10	8,27E-06	1,28E-14	0,00E+00
Cardboard duplex/tripl	1,75E+00	4,45E-07	8,56E-03	8,65E-04	8,39E-06	1,10E-07	6,24E-03	6,62E-04	0,00E+00	3,33E+01	3,30E-01	3,32E-06	1,78E-09	2,51E-06	0,00E+00	0,00E+00
PS (EPS) B250 (1998)	3,30E+00	1,80E-06	2,43E-02	2,04E-03	7,15E-06	9,12E-08	1,38E-02	2,75E-03	0,00E+00	9,64E+01	5,23E-02	1,18E-06	2,40E-09	2,66E-06	0,00E+00	0,00E+00
PE (LDPE) I	2,92E-01	0,00E+00	4,53E-03	4,32E-04	1,94E-07	2,32E-10	3,11E-03	2,17E-03	0,00E+00	2,16E+01	1,02E-02	0,00E+00	4,67E-10	0,00E+00	0,00E+00	0,00E+00
PP granulate average B250	6,61E-02	5,19E-08	6,37E-04	4,86E-05	1,57E-07	4,90E-10	3,88E-04	1,42E-04	0,00E+00	2,58E+00	1,10E-03	4,18E-08	4,94E-11	1,43E-07	0,00E+00	0,00E+00
Poplar I	1,24E-03	2,52E-11	1,59E-05	2,58E-06	2,16E-09	1,44E-11	3,54E-06	1,85E-06	0,00E+00	2,54E-01	1,05E-03	4,38E-09	8,13E-12	4,00E-09	6,43E-18	0,00E+00
ABS I	2,89E+00	8,58E-07	1,52E-02	1,63E-03	9,15E-07	1,76E-08	8,58E-03	1,80E-03	0,00E+00	7,44E+01	1,04E-01	0,00E+00	6,52E-09	0,00E+00	0,00E+00	0,00E+00
EPDM rubber ETH U	1,31E-02	4,30E-08	1,10E-04	8,26E-06	3,55E-07	1,38E-09	9,11E-05	6,33E-05	0,00E+00	4,25E-01	0,00E+00	6,65E-08	1,13E-11	2,64E-07	5,27E-15	0,00E+00
PS (EPS) B250 (1998)	1,03E-01	5,62E-08	7,58E-04	6,38E-05	2,23E-07	2,84E-09	4,29E-04	8,58E-05	0,00E+00	3,01E+00	1,63E-03	3,69E-08	7,49E-11	8,29E-08	0,00E+00	0,00E+00
PA 6 I	1,59E-01	0,00E+00	3,40E-04	5,03E-05	2,18E-07	7,82E-10	1,01E-04	1,27E-04	0,00E+00	3,18E+00	2,57E-04	1,38E-07	3,67E-11	0,00E+00	0,00E+00	0,00E+00
PC I	2,91E-02	1,06E-08	1,48E-04	1,71E-05	6,16E-09	2,36E-11	6,90E-05	1,19E-05	0,00E+00	5,58E-01	1,10E-03	0,00E+00	3,82E-11	0,00E+00	0,00E+00	0,00E+00

<i>Impact category</i>	<i>greenhouse use</i>	<i>ozone layer</i>	<i>acidification</i>	<i>eutrophication</i>	<i>heavy metals</i>	<i>carcinogens</i>	<i>winter smog - P.M.</i>	<i>summer smog - VOCs</i>	<i>pesticides</i>	<i>energy resources</i>	<i>solid waste</i>	<i>Heavy metals (air)</i>	<i>PAHs (air)</i>	<i>Heavy metals (water)</i>	<i>POP (air)</i>	<i>POP (water)</i>
PE (HDPE) I	3,51E-02	0,00E+00	4,86E-04	4,96E-05	2,63E-08	6,66E-12	2,98E-04	3,12E-04	0,00E+00	2,82E+00	1,19E-03	0,00E+00	4,47E-11	0,00E+00	0,00E+00	0,00E+00
PE (HDPE) I	4,37E-02	0,00E+00	6,05E-04	6,17E-05	3,27E-08	8,29E-12	3,71E-04	3,88E-04	0,00E+00	3,51E+00	1,49E-03	0,00E+00	5,57E-11	0,00E+00	0,00E+00	0,00E+00
PET amorph I	1,19E-02	0,00E+00	1,50E-04	7,06E-06	2,19E-08	9,96E-11	1,14E-04	1,47E-05	0,00E+00	1,90E-01	2,93E-04	0,00E+00	1,20E-10	0,00E+00	0,00E+00	0,00E+00
HDPE B250	1,01E-02	5,07E-09	6,18E-05	6,35E-06	1,64E-08	4,75E-11	2,84E-05	3,42E-05	0,00E+00	3,50E-01	1,51E-04	4,49E-09	5,68E-12	1,52E-08	0,00E+00	0,00E+00
PP I	1,74E+00	0,00E+00	2,86E-02	2,15E-03	1,36E-06	1,41E-09	2,06E-02	8,19E-03	0,00E+00	1,25E+02	4,91E-02	0,00E+00	2,22E-09	0,00E+00	0,00E+00	0,00E+00
PS (EPS) B250 (1998)	2,39E+01	1,31E-05	1,77E-01	1,49E-02	5,20E-05	6,62E-07	1,00E-01	2,00E-02	0,00E+00	7,00E+02	3,80E-01	8,61E-06	1,75E-08	1,93E-05	0,00E+00	0,00E+00
PUR semi rigid foam I	2,90E+01	1,94E-07	2,62E-01	3,58E-02	1,37E-03	1,02E-07	2,01E-01	3,99E-02	0,00E+00	5,74E+02	4,94E+00	1,87E-06	3,13E-08	3,07E-05	4,94E-14	0,00E+00
PUR semi rigid foam I	7,98E+00	5,33E-08	7,20E-02	9,86E-03	3,77E-04	2,81E-08	5,52E-02	1,10E-02	0,00E+00	1,58E+02	1,36E+00	5,13E-07	8,62E-09	8,44E-06	1,36E-14	0,00E+00
PVC B250	7,43E-01	2,13E-07	8,79E-03	8,23E-04	3,67E-06	5,13E-09	4,68E-03	2,16E-03	0,00E+00	2,22E+01	4,66E-02	3,98E-07	1,94E-09	6,76E-06	0,00E+00	0,00E+00
adhesive - glue	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Paint ETH S	1,60E-02	1,36E-08	1,13E-04	4,47E-06	1,85E-06	1,13E-08	9,69E-05	7,28E-06	0,00E+00	3,06E-01	0,00E+00	6,18E-07	1,11E-11	1,19E-07	8,22E-16	0,00E+00
Glass (white) B250	4,81E+00	4,37E-06	2,81E-02	2,10E-03	2,90E-04	3,12E-08	1,69E-02	4,34E-03	0,00E+00	7,59E+01	4,28E-01	1,42E-05	9,89E-09	4,92E-06	0,00E+00	0,00E+00
adhesive - glue	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00	0,00E+00
Kraft paper, bleached, at plant/RER U	-1,29E-01	4,62E-08	2,67E-03	1,34E-03	6,23E-06	4,61E-08	1,58E-03	1,58E-04	0,00E+00	2,22E+01	0,00E+00	8,57E-07	0,00E+00	2,04E-05	1,42E-12	0,00E+00
Refrigerant R134a, at plant/RER U	3,95E+00	5,45E-04	3,58E-03	2,59E-04	6,58E-06	1,92E-08	3,09E-03	1,51E-04	0,00E+00	6,30E+00	0,00E+00	6,63E-07	0,00E+00	9,12E-06	3,11E-14	0,00E+00
EPDM rubber ETH U	6,54E-01	2,14E-06	5,48E-03	4,11E-04	1,76E-05	6,89E-08	4,53E-03	3,15E-03	0,00E+00	2,12E+01	0,00E+00	3,31E-06	5,61E-10	1,31E-05	2,62E-13	0,00E+00
Electronics for control units/RER U	1,38E+00	7,43E-08	1,13E-02	2,02E-03	1,90E-04	9,00E-07	9,91E-03	5,22E-04	0,00E+00	3,22E+01	0,00E+00	5,30E-05	0,00E+00	3,10E-04	1,27E-12	0,00E+00
Copper I	2,07E+00	1,28E-10	1,90E-01	8,79E-04	3,13E-08	1,43E-10	1,85E-01	7,64E-05	0,00E+00	2,61E+01	3,69E+01	9,35E-09	1,78E-09	2,03E-08	3,27E-17	0,00E+00
Electronics for control units/RER U	1,47E+00	7,91E-08	1,20E-02	2,15E-03	2,02E-04	9,58E-07	1,06E-02	5,55E-04	0,00E+00	3,42E+01	0,00E+00	5,64E-05	0,00E+00	3,30E-04	1,36E-12	0,00E+00
Lubricating oil, at plant/RER U	1,86E-01	1,61E-07	1,67E-03	9,04E-04	2,62E-06	1,57E-08	1,35E-03	9,69E-04	0,00E+00	1,53E+01	0,00E+00	6,04E-07	0,00E+00	4,99E-06	4,57E-14	0,00E+00
Water demineralized ETH U	1,28E-01	1,69E-07	9,76E-04	3,83E-05	1,31E-06	3,23E-09	7,78E-04	4,08E-05	0,00E+00	2,92E+00	0,00E+00	6,42E-07	1,03E-10	2,79E-06	8,42E-15	0,00E+00
Lubricating oil, at plant/RER U	2,63E-02	2,27E-08	2,36E-04	1,27E-04	3,69E-07	2,21E-09	1,90E-04	1,37E-04	0,00E+00	2,16E+00	0,00E+00	8,52E-08	0,00E+00	7,04E-07	6,45E-15	0,00E+00
Nitrogen, liquid, at plant/RER U	3,25E-02	1,44E-09	1,71E-04	1,26E-05	2,12E-07	2,08E-09	1,36E-04	2,98E-06	0,00E+00	7,91E-01	0,00E+00	4,27E-08	0,00E+00	2,39E-07	2,86E-15	0,00E+00
Argon, liquid, at plant/RER U	1,39E-03	6,07E-07	7,29E-06	5,42E-07	9,09E-07	8,82E-11	5,77E-07	1,34E-07	0,00E+00	3,46E-07	0,00E+00	1,83E-07	0,00E+00	1,04E-07	1,21E-16	0,00E+00

<i>Impact category</i>	<i>greenhouse use</i>	<i>ozone layer</i>	<i>acidification</i>	<i>eutrophication</i>	<i>heavy metals</i>	<i>carcinogens</i>	<i>winter smog - P.M.</i>	<i>summer smog - VOCs</i>	<i>pesticides</i>	<i>energy resources</i>	<i>solid waste</i>	<i>Heavy metals (air)</i>	<i>PAHs (air)</i>	<i>Heavy metals (water)</i>	<i>POP (air)</i>	<i>POP (water)</i>
		11			09		06	07	0	02	0	09		08		0
Oxygen, liquid, at plant/RER U	9,85E-03	4,37E-10	5,17E-05	3,81E-06	6,44E-08	6,31E-10	4,12E-05	9,05E-07	0,00E+00	2,40E-01	0,00E+00	1,29E-08	0,00E+00	7,26E-08	8,66E-16	0,00E+00
Electricity MV use in UCPTE U	1,35E+01	6,65E-06	9,62E-02	3,27E-03	9,13E-05	3,01E-07	8,04E-02	2,94E-03	0,00E+00	3,18E+02	0,00E+00	2,30E-05	6,56E-09	1,34E-04	8,35E-13	0,00E+00
Heat gas B250	9,50E-01	1,09E-08	1,17E-03	1,49E-04	3,55E-07	7,04E-08	5,03E-04	1,09E-04	0,00E+00	1,60E+01	0,00E+00	1,84E-07	7,57E-10	4,41E-07	0,00E+00	0,00E+00
Truck 28t B250	1,08E+01	1,20E-05	1,46E-01	2,46E-02	1,64E-05	8,41E-08	1,56E-02	2,70E-02	0,00E+00	1,41E+02	0,00E+00	5,68E-06	1,13E-07	4,51E-06	0,00E+00	0,00E+00
Sea ship B250	2,48E-01	2,76E-07	3,77E-03	8,45E-05	5,24E-06	1,15E-08	3,33E-03	2,42E-04	0,00E+00	3,41E+00	0,00E+00	2,27E-06	1,66E-10	1,99E-07	0,00E+00	0,00E+00
Hot rolling, steel/RER U	7,13E-01	5,87E-08	2,42E-03	1,07E-03	7,54E-05	8,26E-08	2,37E-03	5,18E-04	0,00E+00	1,51E+01	0,00E+00	2,10E-06	0,00E+00	7,70E-05	1,05E-12	0,00E+00
Sheet rolling, steel/RER U	1,46E+00	1,05E-07	6,80E-03	2,66E-03	1,98E-04	1,82E-07	6,51E-03	4,00E-04	0,00E+00	3,14E+01	0,00E+00	2,09E-06	0,00E+00	1,49E-03	3,24E-12	0,00E+00
Extruding alum I	4,19E+02	4,52E-05	3,27E+00	1,32E-01	1,31E-03	2,38E-06	2,41E+00	1,40E-01	0,00E+00	7,65E+03	2,57E+01	3,14E-04	1,31E-07	2,11E-03	3,75E-12	0,00E+00
Wire drawing, copper/RER U	2,13E+00	1,15E-07	1,55E-02	1,18E-03	1,83E-04	5,45E-07	1,33E-02	6,36E-04	0,00E+00	5,01E+01	0,00E+00	6,94E-05	0,00E+00	1,02E-04	9,50E-13	0,00E+00
Foaming, expanding/RER U	8,30E+00	1,10E-06	4,49E-02	3,22E-03	3,97E-05	4,54E-07	3,57E-02	8,10E-02	0,00E+00	1,68E+02	0,00E+00	2,72E-05	0,00E+00	3,79E-05	5,10E-13	0,00E+00
Injection moulding/RER U	2,34E+00	1,46E-06	1,08E-02	1,57E-03	1,85E-05	1,68E-07	7,90E-03	6,08E-04	0,00E+00	5,86E+01	0,00E+00	3,48E-06	0,00E+00	3,35E-05	3,03E-13	0,00E+00
Extrusion PVC I	9,85E-02	0,00E+00	1,51E-03	1,11E-04	9,71E-09	4,48E-11	1,22E-03	2,89E-04	0,00E+00	1,39E+00	4,24E-03	1,08E-12	9,54E-11	0,00E+00	0,00E+00	0,00E+00

Table A.22: COLD 7 – EoL phase – Output of SimaPro with “Ecoindicator 95 rev EuP method”

<i>Impact category</i>	<i>Unit</i>	<i>Total</i>	<i>Recycling only B250 avoided</i>	<i>Incineration 2000 B250 (98) avoided</i>	<i>Landfill B250 (98)</i>
greenhouse	kg CO2	-5,94E+01	-6,65E+01	6,51E+00	5,74E-01
ozone layer	kg CFC11	-2,79E-05	-2,75E-05	-3,94E-07	3,20E-08
acidification	kg SO2	-2,64E-01	-2,55E-01	-9,04E-03	5,52E-04
eutrophication	kg PO4	-2,34E-02	-2,34E-02	-1,48E-04	2,06E-04
heavy metals	kg Pb	-3,57E-04	-3,68E-04	1,03E-05	6,01E-07
carcinogens	kg B(a)P	-4,24E-05	-4,23E-05	-4,90E-08	2,46E-10
winter smog - P.M.	kg SPM	-1,56E-01	-1,47E-01	-8,42E-03	2,59E-04
summer smog - VOCs	kg C2H4	-6,86E-02	-6,86E-02	-2,47E-04	2,06E-04
pesticides	kg act.subst	0,00E+00	0,00E+00	0,00E+00	0,00E+00
energy resources	MJ LHV	-1,12E+03	-1,08E+03	-4,32E+01	4,19E-01
solid waste	kg	-4,51E+01	-4,51E+01	0,00E+00	0,00E+00
Heavy metals (air)	kg Ni eq	-1,81E-05	-2,12E-05	2,96E-06	1,48E-07
PAHs (air)	kg PAH/20 eq	-7,91E-07	-7,93E-07	1,38E-09	3,13E-10
Heavy metals (water)	kg Hg/20 eq	-8,47E-04	-8,46E-04	-9,61E-06	8,81E-06
POP (air)	kg TE eq	4,67E-11	0,00E+00	4,66E-11	7,59E-14
POP (water)	kg TE eq	0,00E+00	0,00E+00	0,00E+00	0,00E+00

Table A.23: COLD 7 – Life Cycle – Output of SimaPro with “Ecoindicator 95 rev EuP method”

<i>Impact category</i>	<i>Unit</i>	<i>Total</i>	<i>COLD7 assembling</i>	<i>Electricity LV use UCPT E U</i>	<i>Delivery van (<3.5t) B250</i>	<i>cold 7 EoL</i>	<i>cold 7 use materials (per LC)</i>
greenhouse	kg CO2	3.626,95	600,20	2.815,55	0,54	-59,43	270,09
ozone layer	kg CFC11	0,00	0,00	0,00	0,00	-0,00	0,00
acidification	kg SO2	29,37	6,29	20,51	0,00	-0,26	2,83
eutrophication	kg PO4	1,09	0,29	0,69	0,00	-0,02	0,13
heavy metals	kg Pb	0,03	0,01	0,02	0,00	-0,00	0,00
carcinogens	kg B(a)P	0,00	0,00	0,00	0,00	-0,00	0,00
winter smog - P.M.	kg SPM	24,13	4,89	17,19	0,00	-0,16	2,20
summer smog - VOCs	kg C2H4	1,11	0,37	0,63	0,00	-0,07	0,17
pesticides	kg act.subst	0,00	0,00	0,00	0,00	0,00	0,00
energy resources	MJ LHV	82.304,50	11.512,99	66.711,95	6,94	-1.108,22	5.180,84
solid waste	kg	520,15	331,22	85,00	0,00	-45,12	149,05
Heavy metals (air)	kg Ni eq	0,01	0,00	0,01	0,00	-0,00	0,00
PAHs (air)	kg PAH/20 eq	0,00	0,00	0,00	0,00	-0,00	0,00
Heavy metals (water)	kg Hg/20 eq	0,03	0,00	0,03	0,00	-0,00	0,00
POP (air)	kg TE eq	0,00	0,00	0,00	0,00	0,00	0,00
POP (water)	kg TE eq	0	0	0	0	0	0